

ABSTRACT

Title of Document: MAKING THE HIDDEN VISIBLE: A COST ANALYSIS OF TEACHER INCENTIVE FUND (TIF)-SUPPORTED EDUCATOR INCENTIVE PROJECTS

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While educator incentive plans are not new, they have gained traction in the current education policy landscape. Perhaps one contributor to their resurgence has been the Teacher Incentive Fund (TIF), which has awarded nearly \$2.5 billion to 131 recipients since 2006. Despite the popularity of educator incentive programs, we know little about the opportunity costs associated with implementing these reforms. This study provides information about the costs associated with implementing TIF-supported educator incentive projects in three public school districts. In this study, I use data from documents as well as individual and focus group interviews to perform a resource-cost analysis of the implementation of the three incentive projects. I rely on the “ingredients” method (Levin & McEwan, 2001) to identify the full range of resources required to implement these projects for one academic year (2012-13). I determine the opportunity costs associated with these resources, and I detail the extent to which the districts that implemented the incentive projects were able to rely on TIF funds

to support the implementation. I also investigate whether or not the incentive projects were associated with what Rice and Malen (2003) refer to as “human costs” of educational reform. I find that the opportunity costs associated with implementing the educator incentive projects were high: estimated one-year operating costs were over \$1 million in all three sites, and implementation of the costliest project required resources valued at over \$6 million. These costs were considerably higher than expenditures, which illuminates the presence of “hidden” opportunity costs that do not show up on budgets or performance reports but exist nonetheless. For all three projects included in the study, TIF covered almost all fiscal outlays related to project implementation, but it did not cover all opportunity costs. Finally, I find that investing time and effort in project implementation did impose human costs on some project participants. In highlighting the range of resources required to implement these incentive plans and calculating the opportunity costs associated with those resources, this study adds to the literature on educator incentives, the literature on cost analysis, and the policy debate surrounding educator incentives.

MAKING THE HIDDEN VISIBLE: A COST ANALYSIS OF TEACHER
INCENTIVE FUND (TIF)-SUPPORTED EDUCATOR INCENTIVE PROJECTS

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DEDICATION

For T. H.

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A few paragraphs can never adequately acknowledge the astounding contributions of so many people to my academic, professional, and personal growth. I am overwhelmed at the generosity of those I name in these paragraphs and many others who touched my life over the past seven years. Even though these paragraphs aren't enough, they are a small start at saying thank you.

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CHAPTER 1: INTRODUCTION

Calls for attention to educator quality come from policymakers, practitioners, politicians, and interested citizens from a variety of backgrounds. These calls demand that high-quality administrators and teachers staff all of our schools and work with all of our students. They stress the need to recruit and retain the best and the brightest educators in all schools, not just those in wealthy communities. Some argue that good teachers should receive high compensation and that low-performers should exit the profession. These exhortations to heed educator quality are persistent and pervasive parts of the discussion surrounding education in the United States.

Perhaps one reason that many of these calls are so pervasive is that they have a basis in both common sense and research. Quality teachers are vitally important to the success of students – they are, in fact, the most important in-school resource to which students have access (Rice, 2003) – and building administrators are key in creating successful and attractive working environments for teachers (Ladd, 2011). Unfortunately, high-quality teachers and administrators are not distributed equitably across schools (Clotfelter, Ladd, Vigdor, & Wheeler, 2007; Lankford, Loeb, & Wyckoff, 2002). Traditional educator salary schedules are rarely structured to alleviate that issue (Clotfelter, Ladd, & Vigdor, 2011) or to reward educators for characteristics or behaviors that are tightly linked to student achievement (Ballou & Podgursky, 1997). Amidst this backdrop, educator compensation reform in general and educator incentive plans in particular have gained attention. Educator incentive plans are a set of initiatives that provide monetary awards to educators for their performance or for their participation in activities believed to be related to improving performance;

advocates of educator incentives argue that the awards will improve educator quality and/or effort and, ultimately, raise student achievement.

The theory of action behind educator incentive programs suggests that the use of targeted incentives might create a “productivity effect” (Glazerman, 2004, p. 2) and improve educators’ performance by rewarding behaviors that will increase student achievement or by encouraging educators to engage in activities that might build their capacity to help students succeed (Malen et al., 2009; 2011). Targeted incentives might also create a “composition effect” (Glazerman, 2004, p. 2) whereby they encourage high-quality potential educators to enter the profession or encourage educators to serve in traditionally hard-to-staff subjects or schools (Malen et al., 2009; 2011). To achieve these effects, educator incentive plans attempt to reward *demonstrated performance*, to encourage *investments in or extensions of practice*, and to improve *educator supply and distribution*.

In recent years, many educator incentive plans have received financial support from the federal government’s Teacher Incentive Fund (TIF), a grant program first funded under the Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act of 2006. While educator incentive programs certainly existed before TIF, the TIF program represents a significant public investment in educator incentive plans. To date, Congress has appropriated approximately \$2.2 billion to TIF, and between 2006 and 2012, the TIF program awarded approximately \$2.5 billion to 131 recipients (Humphrey et al., 2012; Personal communication with TIF program personnel, 2013; U.S. Department of Education, 2014).¹ Some evidence suggests that investments in TIF could continue; for instance, in January 2015, Senator Alexander, the chairman of the U.S. Senate Committee on

¹ Differences between appropriations and awards are mainly due to the fact that, because TIF grants cover five-year periods, recent awardees have not received all of their money yet. In order for the Department of Education to continue to pay the awards, Congress will have to appropriate funds in future years.

Health, Education, Labor, and Pensions (HELP) for the 114th Congress, proposed a bill to reauthorize the Elementary and Secondary Education Act (ESEA), the primary piece of federal legislation that deals with K-12 education in the United States. Senator Alexander's bill included a provision that would solidify TIF as a distinct program authorized under ESEA, a first for the grant, which "has never actually been officially enshrined in law" through ESEA (Camera & Klein, 2015, para. 22).

Over its life, TIF has supported educator incentive projects² with a variety of designs. Many TIF-funded projects were designed by the school districts that implemented them; in these cases, local personnel crafted projects whose components (ostensibly) took into account local preferences regarding what behaviors to reward and how to reward these behaviors. These homegrown projects display different patterns regarding project design elements such as eligibility to participate in the projects, bases for incentive rewards, and the size of the awards (Center for Educator Compensation Reform [CECR], 2012). While many TIF-supported projects were designed by local implementers, a substantial number of TIF projects instead chose to implement the System for Teacher and Student Advancement (commonly referred to as TAP), a nationally-recognized educator incentive program model. TAP began in 1999 as an initiative of the Milken Family Foundation and is currently operated through the National Institute for Excellence in Teaching (NIET). The TAP model includes "multiple career paths," "ongoing applied professional growth," "instructionally focused accountability," and "performance-based compensation" (NIET, 2014). Whether

² In this dissertation, while I use terms such as "program," "plan," and "initiative" to describe educator incentive programs in general, I use the term "project" to describe TIF-supported educator incentives programs, including the three particular educator incentive plans from which I collected and analyzed data. This choice is intentional. I use the term "project" so that my use of language adheres to conventions surrounding the TIF policy. In this particular grant environment, TIF itself is referred to as a "program" and the incentive plans that TIF supports are referred to as "projects."

locally-developed or TAP, the proliferation of educator incentive plans across the country has been aided by the infusion of over \$2 billion of Teacher Incentive Fund money to support incentive projects throughout the United States.

Knowledge about appropriations to the TIF program and the amount that TIF has promised to local grantees does not reveal the entirety of TIF projects' costs. Appropriation numbers and grant amounts do not provide information regarding the full range of costs related to TIF programs – both in terms of whether local implementers actually spent all of the federal government's money and in terms local fiscal and non-fiscal contributions to the programs. Additionally, they tell us little about these projects' costs to society as a whole. That is, by themselves, these numbers do not illuminate what society gives up in order to invest resources (e.g., public money, private money, implementers' time and expertise) in these projects rather than to direct these resources elsewhere.

This lack of knowledge is problematic. Making judgments about whether or not to invest resources in educator incentive policies like TIF requires, among other things, comprehensive and nuanced knowledge about the full range of fiscal and non-fiscal resources that these programs require, the value of those resources, and the opportunity costs associated with choosing to invest time, energy, and money in these programs rather than other policies. Without information about the opportunity costs associated with the implementation of educator incentive programs (and, ideally, the effectiveness of the programs at achieving desired outcomes), policymakers are poorly equipped to make decisions about the allocation of finite resources. Further, without knowledge about the costs of programs like educator incentives, researchers, policymakers, and practitioners miss opportunities to have rich and reasoned discussions regarding the tradeoffs that are associated with choosing to invest in

one set of programs over another and the implications of those tradeoffs for educators, students, and others in society.

Purpose of the Study

The purpose of this dissertation is to begin to fill the gap in knowledge about the costs of educator incentive plans. In this study, I analyze the full range of fiscal and non-fiscal resources required to implement educator incentive plans and the opportunity costs associated with consuming those resources.³ The findings of this study illuminate three sets of interrelated issues: the magnitude of costs associated with implementing three different TIF-supported educator incentive projects; the extent to which the districts used TIF money to cover the cost of implementing the educator incentive projects in the 2012-13 school year; and whether or not participants' investment of time and energy to implement these educator incentive projects imposed human costs (or "reform-related sacrifices made by individuals and groups of individuals in [an] organization"; Rice & Malen, 2003, p. 639) on those who were associated with the project.⁴ Taken together, these three sets of findings provide a relatively comprehensive portrait of the resources required for one year of implementing grant-supported educator incentive projects in local districts and the opportunity costs associated with using those resources for incentive plans rather than other purposes.

Research Questions

The dissertation answers the following research questions:

³ Other, non-implementation costs associated with TIF programs also exist. For instance, these programs are accompanied by planning and evaluation costs. Due to data limitations, planning and evaluation costs are not the focus of the current study.

⁴ Other aspects of project implementation, including but not limited to the process of linking educator compensation to performance, might also be associated with human costs. The only human costs I focus on in this study are those associated with investing time and energy into project implementation.

1. What is the full range of resources required to implement different TIF-supported educator incentive models? What opportunity costs are associated with these resources?
2. What are the total societal costs of various models of educator incentive programs, and how is the cost burden borne by TIF and non-TIF sources?
3. In what ways can knowledge about the costs of educator incentive programs inform research and policy?

Data and Methods

The data that I use to answer these questions come from three public school districts that received a TIF grant to implement an educator incentive project. From each of these districts, I gathered data from documents as well as individual and focus group interviews to learn about the resources required to implement the projects during the 2012-13 school year. Document data included information that described the projects (such as project brochures, handouts, and reports) and information from budgets, grant performance reports, and incentive payout records. Interview data came from district administrators as well as school administrators and teachers. These field data provided information about the resources that the projects required; I supplemented these data with price information from a number of government and commercial sources, which I explain in more detail in Chapter 3. In order to provide context regarding the TIF program as a whole, I gathered information from personnel who worked with the TIF program at the U. S. Department of Education.

I use these data to perform a cost analysis of the three educator incentive projects. Multiple types of cost analysis exist, including cost-feasibility analysis, cost-effectiveness analysis, and cost-benefit analysis (Levin & McEwan, 2001; Rice, 1997). All three of these

analyses provide systematic information regarding the resources required to pursue a particular course of action and the opportunity costs associated with those resources; two of these analyses (cost-effectiveness analyses and cost-benefit analyses) pair these cost data with information about program results to provide ratios of costs to outcomes. Cost-effectiveness analyses require analysts to compare multiple programs with the same outcome, and cost-benefit analyses require that outcomes can be translated into monetary terms so that analysts can investigate monetary cost-to-benefit ratios (Levin & McEwan, 2001; Rice, 1997).

As I describe in more detail in Chapter 2, literature on the outcomes of educator incentive programs is in an emergent state, and effectiveness data that would be sufficient for cross-project comparisons are not available for the all of projects I include in this study. At this stage, then, cost-feasibility analysis represents an important first step in understanding the costs associated with educator incentive plans. This type of analysis lays the groundwork for future cost-effectiveness and cost-benefit studies, which can take place once a greater consensus develops within the literature on the effectiveness of educator incentive plans. A cost-feasibility study also provides valuable insight in its own right regarding the opportunity costs associated with implementing educator incentives, a key part of educator incentives that is understudied in the literature.

In this study, I use the “ingredients” approach to perform a cost-feasibility analysis of the three TIF-supported educator incentive projects. Through this approach, I unpack the full range of resources required to implement each of the projects for one year. I then determine the opportunity costs associated with using the required resources for the incentive projects rather than putting those resources toward their next best use (Levin & McEwan, 2001). In

order to provide a more complete picture of the opportunity costs associated with the incentive plans in the study, I pair the information from the cost-feasibility analysis with a preliminary discussion of the human costs associated with investing time and energy (that is, burdens over and above the time itself) into implementing these multidimensional initiatives.

Significance of the Study

This study adds to both the literature on educator incentives and the literature on cost analysis. In terms of the literature on educator incentives, this study provides a snapshot of the opportunity costs associated with implementing educator incentives for one year, which is an aspect of these prominent reforms that is currently poorly understood. It also illuminates the extent to which TIF covers the costs of the projects, which is an important addition to the literature on the sustainability of educator incentive plans, since TIF grantees that aim to continue their incentive plans after the life of the grant need to understand the extent to which outside sources currently support the projects. This study's investigation of the existence of human costs associated with investing time and energy into the incentive projects is a valuable addition to the literature on the implementation of educator incentives, which often talks about the strain of program implementation but does not inspect these burdens through the lens of human cost.

This study contributes to the body of cost research by addressing issues – both common and uncommon – with cost analysis. In this study, I address common challenges, such as how to present accurate and comparable cost estimates in the face of matters that can affect the interpretation of cost data, such as differences in program size and location. I also confront uncommon issues, such as the necessity to recognize difficult-to-quantify human costs. In so doing, I open the door for a larger discussion of new and better ways to

incorporate this important yet often neglected piece of the opportunity cost puzzle into the body of research on the cost of educational initiatives.

Limitations

While this study adds to the literature on educator incentives, increases the body of cost analyses of educational initiatives, and contains insights for policymakers and practitioners who might consider an educator incentive plan as a possible policy option, it has limitations. First, this study is limited in scope. It only assesses (a) the costs of district-level projects, as opposed to those located in states or charter schools; (b) the costs of implementing the projects for one academic year (2012-13), rather than the longitudinal costs of the entire projects (including, for instance, project planning, multiple years of project implementation, and project evaluation); and (c) the cost-feasibility of these projects, as opposed to the cost-effectiveness or the cost-benefit of the projects. Second, the fact that I collected data from key project implementers rather than all project participants influences the study's estimates of the magnitude of project costs; the fact that each of the projects changed slightly over time means that the project cost estimates are only applicable to the projects as they were structured during the 2012-13 school year. Third, while this study illuminates the extent to which districts used TIF and non-TIF funds to cover project costs, it does not identify the extent to which specific non-TIF entities (e.g., districts and employees within them) bore the costs of project implementation. Finally, this dissertation's human cost findings are limited to a discussion of the burdens associated with participants' investment of time and energy into project implementation and shed light only on the existence of these costs rather than their breadth.

Summary

Educator evaluation and compensation reform proposals in general and educator incentives in particular are popular, perhaps due to their political attractiveness and perhaps due to their real or perceived ability to deal with shortcomings in the educator labor market. The federal Teacher Incentive Fund program marks substantial and sustained federal investments in these types of programs. This study presents a systematic analysis of the resources required to implement certain types of TIF-supported educator incentive projects and highlights the opportunity costs associated with the choice to invest in these initiatives. In doing so, it adds to the growing body of education research that focuses on the costs associated with educational reform generally and educator incentives specifically. It also provides meaningful information for discussions regarding program adoption and program implementation, because policymakers who promote educator incentive programs and researchers who study them should have a thorough understanding of the costs associated with the programs.

CHAPTER 2: LITERATURE REVIEW

This chapter presents a review of various streams of literature that contextualize both the policy at the center of the study and the method of analysis that I use to investigate the policy. First, the chapter provides background for the dissertation's policy focus by situating educator incentive plans within the larger discussion of human capital issues in education. Second, the chapter provides background for the method of the study by explaining fundamental concepts upon which resource-cost analyses rest. In both sections, I rely on conceptual as well as empirical literature that I gathered through searches of scholarly databases (such as ERIC, Education Source, and Google Scholar), searches of education policy journals (such as *Education Finance and Policy*, *Educational Evaluation and Policy Analysis*, *Educational Administration Quarterly*, and others), and reviews of the references of articles I found through searches of databases and journals. In both sections of the literature review, I provide overviews and appraisals of the literature that form the basis of the review.

Human Capital and Educator Policy

Like any enterprise, education requires investments of capital, and while material resources such as school buildings, computers, and books are certainly important for the educational process, education relies particularly heavily on human capital, or the "value of human skill and other acquired abilities" (Cohn & Geske, 2004, p. 14). The educational process requires high-quality teachers who use their knowledge and skills to help students learn and achieve. Although a variety of in-school and out-of-school factors impact students, research demonstrates that high-quality teachers are the most important school-level resource for student success (Rice, 2003). Given the importance of teacher quality in particular and human capital more broadly to the educational enterprise, it makes sense to invest in and

distribute human capital in ways that align with fundamental values, such as the important policy goals of quality, efficiency, and equity (Mitchell & Encarnation, 1984). Simply put, a well-functioning educational system requires skilled and knowledgeable educators who are distributed across schools such that, first, no school has too many or too few effective educators and, second, all students – regardless of whether or not they are growing up in privileged contexts – have access to effective educators. This section of the literature review deals with human capital issues in education and how educator incentive programs aim to address these issues.

These discussions help to situate the current study, which focuses on the costs associated with three educator incentive projects that have received TIF grants, in a larger context. I draw literature on human capital issues in education mainly from scholarly sources such as peer-reviewed journal articles and scholarly books, and I supplement that information, where necessary, with work from research and policy organizations. The literature on educator incentives comes from more mixed sources. I draw literature on the conceptual foundations of educator incentive plans and some empirical literature on extant incentive programs from peer-reviewed sources, but due to the emerging nature of the conversation around educator incentives, I supplement these sources more heavily with information from non-peer-reviewed reports. My use of this “multivocal” (Ogawa & Malen, 1991) collection of sources allows for a more complete picture of an educational policy that is supported by an ever-growing and changing body of research.

Human Capital Issues in Education

In this section, I discuss matters related to how policymakers and practitioners (a) identify and measure human capital, (b) invest in human capital, and (c) address the supply

and distribution of human capital across schools. Because human capital is so important for education, considerable effort has gone into thinking about how to measure its quality, how to increase its supply, and how to distribute it equitably and efficiently across schools.

Generally, the body of human capital research in education is larger for teachers than it is for school administrators. Accordingly, in the following sections of the literature review, I focus more heavily on teachers than I do on school administrators, though I incorporate information about administrators – typically, school principals – at the end of each section.

Identifying and measuring educator excellence. Understanding whether students and schools have access to effective teachers requires the ability to identify and measure excellence. In recent years, new approaches to teacher evaluation have gained attention and traction, particularly in the face of criticisms over the accuracy and utility of traditional methods of teacher evaluation. Below, I describe traditional approaches to teacher evaluation, and I then outline several contemporary responses to teacher evaluation that attempt to address criticisms related to traditional approaches.

Traditional approaches to teacher evaluation. While teacher evaluation is not a recent concept or practice (see, for instance, Miel, 1948), it garnered renewed attention in the early 1980s. According to Wise, Darling-Hammond, McLaughlin, and Bernstein (1985),

Teacher evaluation attracted new interest in April 1983, when the National Commission on Excellence in Education published *A Nation at Risk: The Imperative for Educational Reform*. ... Increasingly, educational policymakers consider better teachers and better teaching the keys to better education. ... As unremarkable as this consensus now seems, it reverses educational policy trends of the past 2 decades. Teacher-proof curriculum, test-based instructional management, and student competence testing initiatives were all based on the premise that education could be improved without improving the quality of teachers (pp. 60-62).

A discussion of teacher evaluation practices at that time identified several different potential methods of teacher evaluation, including teacher interviews, competency tests, assessments

of indirect measures (such as training or experience), classroom observations, student ratings, peer review, links to student achievement, and self-evaluation (Darling-Hammond, Wise, & Pease, 1983, pp. 304-308). Despite the existence of multiple methods of assessing teacher performance, Darling-Hammond and colleagues (1983) pointed out that classroom observations, “usually coupled with teacher interviews or conferences, [were] the mainstay of most teacher evaluations” (p. 306). Indeed, this primacy of classroom observations endured at multiple points in time across the next decades. For instance, a 1985 survey of teachers in the 100 largest school districts in the United States found that observations by school administrators were the most common form of teacher evaluation (Ellett & Garland, 1987). On a national survey during the 1992-93 school year, 92 percent of public elementary school teachers reported undergoing formal classroom observations (Nolin, Rowand, & Farris, 1994, p. 5). A 1995 survey – an updated look at teachers in the 100 largest school districts in the United States – again found that observations by school administrators were the most common form of teacher evaluation (Loup, Garland, Ellett, & Rugutt, 1996).

Despite their widespread use, these traditional classroom observations have been the focus of scrutiny and reform. Research has found that the percentage of teachers who receive formal ratings of unsatisfactory performance based on these observations does not match the percentage of teachers whom administrators perceive to be incompetent (Tucker, 1997), and reformers have derided these systems as little more than low-stakes, “drive-by,” checklist-based, binary (satisfactory or unsatisfactory) assessments of teacher performance (Toch & Rothman, 2008) that fail to adequately identify teacher quality or provide sufficient feedback for educator growth (Weisberg, Sexton, Mulhern, & Keeling, 2009). Additionally, recent high-profile educational policies, such as the federal Race to the Top initiative, have focused

on teacher evaluation as a target of change (Hallgren, James-Burdumy, & Perez-Johnson, 2014). Specifically, some of the award criteria for Race to the Top, the “largest competitive grant program ever administered by the U. S. Department of Education,” were related to states’ approaches to teacher evaluation, “includ[ing] whether states proposed to:

1. Establish clear approaches to measuring student achievement growth for individual students.
2. Design and implement rigorous, transparent, fair evaluation systems for teachers.
3. Differentiate effectiveness using multiple rating categories that take student achievement growth into account as a significant factor and are designed with teacher involvement.
4. Conduct annual evaluations that include timely and constructive feedback and provide teachers with data on student achievement growth for their students, classes, and schools.
5. Use evaluations to inform decisions about staff development, compensation, promotion, tenure, certification, and removal of ineffective teachers” (Hallgren et al., 2014, p. 2).

In response to critiques, calls for reform, and perceived inadequacies in teacher evaluation practices based on classroom observations using traditional rubrics, educational institutions have increasingly turned to alternative (and sometimes multiple) methods of teacher evaluation. The following sections detail three alternative approaches to teacher evaluation.

Contemporary responses to teacher evaluation. Three alternatives, which I discuss below, include standards-based evaluations, evaluations based on student assessment results, and evaluations based on student learning objectives.

Standards-based evaluations. One departure from traditional approaches is the use of standards-based evaluations such as the Danielson (2007) *Framework for Teaching* or the TAP program’s *Teaching Skills, Knowledge, and Responsibilities Performance Standards* rubric (NIET, 2014). Like traditional approaches, standards-based evaluations rely on classroom observations, often (though not necessarily) performed by school administrators.

The hallmarks of these evaluations are the practice of judging teacher performance using rubrics tied to multiple standards and domains of practice; using multilevel rating systems (e.g., “distinguished,” “accomplished,” “proficient,” “developing,” “not demonstrated”), either for ratings on domains of practice or for overall ratings of teacher performance; and using additional information (beyond what was observed during a classroom visit, such as classroom artifacts) in the evaluation (Shakman et al., 2012). According to Odden (2004), “[a] standards-based teacher evaluation system requires the following:

1. A set of teaching standards that describes in considerable detail what teachers need to know and be able to do.
2. A set of procedures for collecting multiple forms of data on [a] teacher’s performance for each of the standards.
3. A related set of scoring rubrics that provide guidance to assessors or evaluators on how to score the various pieces of data to various performance levels and a scheme to aggregate all microscores to an overall score for a teacher’s instructional performance.
4. A way to use the performance evaluation results in a new knowledge- and skills-based salary schedule if the evaluation is to be used to trigger fiscal incentives” (p. 127).

Research on the use of standards-based evaluations finds that higher teacher standards-based evaluation ratings are associated with larger student standardized assessment score gains and positive student engagement and classroom experiences (Kane & Staiger, 2012). Further, research from an evaluation reform in Chicago (Sporte, Stevens, Healy, Jiang, & Hart, 2013) finds that educators perceived the new evaluation to be a potential avenue for meaningful discussions of professional practice because it provided supervisors detailed rubrics and required them to gather fine-grained information about teachers’ work. This study also reports that educators perceived that the standards-based evaluation, unlike previous traditional evaluations, could provide teachers useful feedback on their strengths as well as their weaknesses. The implementation of the system, though, was reportedly

challenging and resource intensive (Sporte et al., 2013). Additional research on standards-based evaluations suggests that reliable evaluation results require ratings from multiple observations and observers (Ho & Kane, 2013; Kane & Staiger, 2012). Further, Papay (2012) argues that districts that seek to implement standards-based evaluations should not only ensure that the standards and rubrics they choose conform to or be adapted to local context, but also that the districts adopt or create standards regarding how assessors should carry out the evaluations and pay attention to the systems' costly and time intensive nature.

Evaluations based on student assessment results. Another departure from traditional classroom evaluation approaches is the practice of using statistical models to link teacher evaluation to student outcomes on standardized tests. While evaluations could be tied to student test scores in a variety of ways,⁵ one approach that has gained considerable attention in recent years has been the use of teacher-level value-added models (VAMs). A large body of research has emerged surrounding these increasingly adopted yet highly controversial models; the following paragraphs present a brief overview of the debate.

Many researchers present cautions regarding the practice of linking teacher performance with student achievement data for a number of reasons. First, the data required to construct teacher value-added models rule out teachers whose students do not take standardized tests on a regular basis (e.g., teachers of young students or teachers of non-tested subjects). Second, controversy exists even for the creation of VAMs for teachers in tested subjects and grades. For instance, given the collective nature of teaching and learning, these models are accompanied by challenging questions surrounding attempts to isolate the

⁵⁵ States, districts, and schools have used a variety of student-assessment-based evaluations that vary on several dimensions. Some focus on school-wide achievement while others focus on classroom-based achievement. Some focus on student growth while others focus on the extent to which students meet a standard of proficiency (Humphrey et al., 2012). I focus on teacher-level VAMs in this discussion given their growing popularity, their apparent political appeal, and the large body of research on the use of these tools.

impact of a single teacher on a student's performance (Amor, Tucker, & Ozek, 2013). Furthermore, Rothstein (2009) advises against making causal claims regarding teachers' impact on student achievement due to bias introduced by nonrandom student assignment into classrooms. McCaffrey, Sass, Lockwood, and Mihaly (2009) caution that the use of a single year of student data in evaluation decisions can be problematic, since "estimates based on very few students will tend to be extremely unstable across time" (p. 587) and because "there is considerable year-to-year variability in teacher performance measures even after accounting for sampling error" (592). This variability can be consequential; in their study, teachers who were in the top and bottom quintiles of performance one year were not necessarily in those same quintiles the next year. In fact, some teachers even switched from the top to the bottom quintile and vice versa (McCaffrey et al., 2009). Additional research has found that different VAM specifications – none of which was inherently superior to another – produced different results and would lead to different conclusions regarding teacher effectiveness (Goldhaber, Goldschmidt, & Tseng, 2013; Sass, Semykina, & Harris, 2014).

Despite complications associated with VAMs' ability to serve as valid and reliable measures of teacher performance, many researchers have concluded that, under the right conditions, these approaches to teacher evaluation are still worthwhile. Some have argued that while VAMs are imperfect, they are helpful because (a) they are relatively low-cost, given that they rely on data that districts already collect (Lefgren & Sims, 2014); (b) the reliability of VAMs is comparable to the reliability of evaluation methods used in other professions; and (c) VAMs present decision-makers with arguably better information on

teacher quality than extant alternatives, such as seniority (Glazerman et al., 2010, pp. 7-8, 10-11). Glazerman and colleagues (2010) contend,

Critics of value-added methods have raised concerns about the statistical validity, reliability, and corruptibility of value-added measures. We believe the correct response to these concerns is to improve value-added measures continually and to use them wisely, not to discard or ignore the data (p. 2).

A large body of research has attempted to do just that. This set of studies, most of which acknowledge limitations associated with the use of VAMs, aims to identify model specifications that can reduce the degree of bias in estimates of teacher quality based on VAM results (Chetty, Friedman, & Rockoff, 2013; Condie, Lefgren, & Sims, 2014; Kinsler, 2012; Ishii & Rivkin, 2009; Koedel & Betts, 2010; Koedel & Betts, 2011; Lefgren & Sims, 2012; McCaffrey et al., 2009).

Evaluations based on student learning objectives. Even if VAMs and other test-based measures of educator performance were completely free of bias, they nevertheless would be unable to capture the quality of teachers for whom ample standardized student test data are unavailable. Thus, amid a desire to base teacher evaluation on student outcomes in some way, a third departure from traditional educator evaluation has emerged. Given that VAMs and other test-based measures may not be “available or appropriate for all teachers and subjects,” states and districts have begun to use student learning objectives (SLOs) to evaluate teachers (Lacireno-Paquet, Morgan, & Mello, 2014, p. 1). SLO-based evaluation is an increasingly popular policy option; 30 states had SLO policies in 2014 (Lacireno-Paquet et al., 2014). According to Lachlan-Haché, Cushing, and Bivona (2012),

Student learning objectives are a set of goals that measure educators’ progress in achieving student growth targets. In short, educators or educator teams establish learning targets for groups of students based on available data; monitor student growth toward the targets; and, at the end of an agreed-upon time period, determine the degree to which students meet the targets (p. 1).

SLO development processes typically require that teachers (a) identify standards for their subjects, be they locally developed or tied to extant benchmarks including but not limited to state standards (Lacireno-Paquet et al., 2014); (b) analyze student data (broadly-considered) to determine an appropriate goal for student growth on a teacher-created or externally-developed assignment or assessment; (c) identify a timeframe within which to meet the goal; and (d) receive approval from an evaluator (often though not necessarily the school principal or other administrator) to use the student growth goal as an SLO. Prior to the end of the period in which the educator is supposed to meet the SLO, evaluators and teachers can meet to discuss progress toward reaching the goal. At the end of the period, evaluators assess whether the teacher attained the SLO, and the evaluator and the teacher meet to discuss the process and the evaluation results (Lachlan-Haché et al., 2012).

Research on the suitability of SLOs as tools for teacher evaluation is limited but emerging. Gill, Bruch, and Booker (2013) reviewed literature on the reliability and validity of using student learning objectives to measure teacher quality. The authors found little statistical evidence regarding how reliable or valid SLOs are; most quantitative studies of SLOs simply reported the percentage of teachers who met their objectives. According to these studies, most teachers did meet their SLOs, but the percentages of teachers who met SLOs were generally lower than the percentages of teachers who received satisfactory ratings on traditional classroom observation rubrics. Gill et al. (2013) also reviewed SLO studies that highlighted implementation issues. These studies found that (a) SLO initiatives can be very time-consuming for both teachers and evaluators, (b) teachers need ample direction to set and monitor SLOs, (c) teachers need adequate access to student performance data in order

to set meaningful and appropriate objectives, and (d) SLO systems may raise issues regarding the equity and fairness of using non-standardized measures to evaluate teachers.

Approaches to school administrator evaluation. As I mention above, research on teacher evaluation dominates the discussion regarding educator (i.e., teacher and administrator) evaluation. However, a growing body of literature has begun to focus on principal evaluation (Davis, Kearney, Sanders, Thomas, & Leon, 2011). Many of the issues that research on teacher evaluation has highlighted – such as critiques of extant evaluation approaches and concerns over the use of student achievement data in evaluations – also appear in this growing conversation around principal evaluation. For instance, a recent literature review of scholarship on principal evaluation reports that “[m]ethods and tools used to evaluate principals vary widely” across districts and that “[m]ost district-developed principal evaluation systems lack validity and reliability” (Davis et al., 2011, p. 13).

Perhaps in the face of critiques of principal evaluation systems or perhaps due to pressure from policies like Race to the Top, a growing number of states and districts are incorporating student test score data in their principal evaluation systems (Fuller & Hollingworth, 2014). As was the case with teacher evaluations based on student achievement data, researchers express cautions and, sometimes, concern about the use of student test scores to evaluate principal effectiveness. Grissom, Kalogrides, and Loeb (2015) test different methods of linking principal performance to student achievement and find that estimates of principal effectiveness vary depending on the model. Fuller and Hollingworth (2014) examine the assumptions that undergird multiple approaches to linking student achievement data to principal evaluations and proffer the view that “even the most sophisticated and thoughtful efforts to estimate principal effectiveness [based on student test

scores] are flawed and produce inaccurate results” (p. 491). It seems, then, that despite the need for additional research on the evaluation of school administrators, evidence from extant studies generally highlights issues that are similar to the issues surrounding teacher evaluation.

Investing in human capital. The previous paragraphs suggest that policymakers and practitioners have paid a great deal of attention to identifying and measuring teacher quality. A second human capital issue that has received considerable attention is the matter of increasing teachers’ capacity to improve student outcomes.⁶ This section outlines two major activities geared toward increasing the capacity of current educators: professional development and the provision of job expansion and job redesign opportunities for teachers.

Teacher professional development. One way to invest in human capital is to provide teachers with initial and ongoing professional development. The following paragraphs provide background on professional development in education by highlighting different forms that professional development can take, accepted standards for high-quality professional development, research on effective professional development, and information about how much districts spend on professional development.

Professional development can take a variety of forms. Choy and Chen (1998) note that “[t]raditional formats for [ongoing professional development activities] include half- or full-day workshops and programs sponsored by districts, schools, professional associations, and other organizations, and courses taken outside the K-12 education system, such as university extension, adult education, or college courses” (p. 26). National Center for

⁶ Investments in human capital can take place prior to teachers’ entry into the profession (for instance, in a teacher education or preparation program) or while teachers are already in the profession. While investments at both stages are important, the discussion here focuses on investments that take place while teachers are already in the profession.

Education Statistics (NCES) data suggest that many teachers experience these types of traditional professional development; in 1999-2000, 95 percent of public school teachers and 87 percent of private school teachers reported attending a workshop, conference, or training (Choy, Chen, & Bugarin, 2006, p. 48).

In this 1999-2000 survey, perhaps in response to evolving understandings regarding how professional development could or should be structured, NCES collected information about new forms of professional development, including “regularly scheduled collaboration with other teachers on issues of instruction” and “individual or collaborative research on a topic of interest” (Choy et al., 2006, p. 48). While a large percentage of teachers did report participating in traditional, workshop- or class-based professional development (see the previous paragraph for details), 74 percent of public school teachers and 60 percent of private school teachers reported that they engaged in regularly scheduled collaboration with other teachers on issues of instruction, and 47 percent of public school teachers and 45 percent of private school teachers reported engaging in individual or collaborative research on a topic of interest (Choy et al., 2006, p. 48).

Over time, researchers have argued for increased attention to standards for high-quality professional development. For instance, Hawley and Valli (2007) argue that high-quality professional development should: (1) be based on analyses of student performance; (2) “be primarily school based and built into the day-to-day work of teaching”; (3) be based on input from teachers themselves; (4) “reflect the best research on the given topic”; (5) focus on student learning; (6) “provide experiential opportunities to gain an understanding of and reflect on the research and theory underlying the knowledge and skills being learned”; (7) “mirror the instructional approaches [that teachers] are expected to master”; (8) “be

continuous and ongoing”; (9) “be connected to a comprehensive change process focused on specific goals for improving student learning”; and (10) be evaluated based on student outcomes as well as changes in instructional practices (Hawley & Valli, 2007, pp. 120-130).

While some agreement over standards for professional development exists, research on the effectiveness of different forms of professional development is relatively scant. Hill, Beisiegel, & Jacob (2013), for instance, argue that much of the research on professional development does not adequately illuminate which features of professional development improve teacher and student performance. Still, some research does provide information about professional development effectiveness. For instance, Desimone, Porter, Garet, Yoon, & Birman (2002) found benefits associated with professional development that relied on teacher collaboration, that promoted teachers’ active (rather than passive) engagement with the professional development topic, and that was compatible with their context (e.g., that aligned with other work that they did or with their prior knowledge). Additionally, a study of current and former State Teachers of the Year reported that several supports, including professional development opportunities such as “collaboration with colleagues,” “common planning time,” “professional learning communities,” and “self-directed professional growth plans,” were important supports for novice teachers. This study also found that, compared to the percentage of teachers who rated district-sponsored professional development as “very important,” a higher percentage of current and former State Teachers of the Year rated self-selected professional development as “very important” during their career stage (the point in their careers when they were no longer novice teachers but had not yet taken on additional responsibilities; Behrstock-Sherratt, Bassett, Olson, & Jacques, 2014).

Research on how much districts spend on professional development is also very scant. Extant information from a small number of studies suggests that spending on professional development makes up “between 2% and 4% of districts’ operating expenditures, though some studies suggest that these expenditures could consume more than 8% of operating expenses” (Rice & Hoyer, 2014, p. 560).

Job expansion and job redesign opportunities for teachers. While investments in human capital often occur through professional development, investments in human capital can also take the form of providing teachers the opportunity to participate in job expansion or job redesign opportunities. Job expansion opportunities allow teachers to take on additional responsibilities in the form of relatively short-term special projects that supplement their traditional roles in the classroom (Malen, Murphy, and Hart, 1988; also called “job enlargement” by Brandt, 1990). Job redesign opportunities, on the other hand, actually reconceptualize teachers’ work by allowing them to take on new roles that might include “formal staff development, peer supervision, curriculum-instructional improvement, and broad decisionmaking responsibilities, as well as classroom teaching assignments” (Malen, Murphy, and Hart, 1988, p. 119).

Nationally representative data collected at different points in time suggest that many teachers have participated in job redesign and/or expansion opportunities. According to NCES data, “about 11 percent of all teachers served as a mentor or master teacher in a formal teacher induction program in 1993-94” (Choy & Chen, 1998, p. 26). In the 1999-2000 school year, 42 percent of public school teachers and 41 percent of private school teachers served as mentors, peer observers, or coaches, and 22 percent of public school teachers and

15 percent of private school teachers presented at workshops, conferences, or trainings (Choy et al., 2006, p. 48).

Evidence from the survey of current and former State Teachers of the Year suggests that serving in a job expansion and/or redesign role is influential for those who take on the added responsibility. Over a third of career teachers who had taken on one of these roles reported that these responsibilities were among the three most important professional supports during their career stage (Behrstock-Sherratt et al., 2014, p. 16, 18). Additionally, substantial percentages (ranging from over a third to over half) of teacher leaders who had participated in a variety of job expansion and redesign activities such as “develop[ing] curricula,” “present[ing] at conferences or to peer groups,” “becom[ing] a mentor or instructional coach,” “deliver[ing] professional development,” and “provid[ing] formal coaching or mentoring to colleagues to improve their instructional practice” reported that these responsibilities were among the three most important supports during the teacher leader stages of their careers (Behrstock-Sherratt et al., 2014, p. 21).

Professional development for school administrators. As was the case for educator evaluation, a great deal of scholarly literature regarding professional development focuses on teachers. Some sources, however, do provide insight into the types of professional development available to school administrators. Peterson (2002) reports that principals might engage in many different types of professional development, including “workshops, short academies, and longer professional development opportunities” (p. 217) led by a variety of professional organizations and other institutions (e.g., districts, universities, professional development companies, and school reform developers). Peterson (2002) claims that “principals often construct a crazy quilt of these offerings to enhance their learning and

connect to professional groups” (p. 217). Some studies that focus on the professional development of school administrators suggest that the qualities that might render teacher professional development high-quality, such as being job-embedded, differentiated, experiential, and focused on student outcomes (see, for instance, Hawley & Valli, 2007), are also important for administrator professional development (Malen et al., 2015; Peterson, 2002).

Attracting and distributing human capital. The previous two sections outline issues related to measuring human capital and investing in human capital. A third human capital consideration relates to increasing the supply of effective teachers by attracting high performers into the profession and by distributing human capital across schools equitably and efficiently. In terms of supply, some research suggests that the teaching profession struggles to attract and retain high-ability employees. For instance, while college graduates who become teachers demonstrate higher academic ability than all college enrollees, college graduates who become teachers demonstrate lower academic ability than the subset of college-goers who actually obtain a college degree (Corcoran, Evans, & Schwab, 2004; Guarino, Santibañez, & Daley, 2006; Hanushek & Pace, 1995). Furthermore, teachers with higher exam scores and degrees from selective postsecondary institutions tend to stay in teaching for a shorter time than their peers (Guarino, Brown, & Wyse, 2011; Murnane & Olsen, 1990; Murnane, Singer, Willett, Kemper, & Olsen, 1991).

Furthermore, while all schools demand high quality educators, not all schools consistently meet this demand. Schools with high percentages of economically disadvantaged students, low-achieving students, students of color, and students with special needs generally have less qualified teachers and face higher teacher turnover than schools

without these characteristics (Clotfelter et al., 2011; Clotfelter et al., 2007; Guarino et al., 2006; Guarino et al., 2011; Lankford et al., 2002). Urban schools, on average, have less qualified teachers than do nonurban schools (Guarino et al., 2006; Lankford et al., 2002). Given that teachers tend to prefer to work in or near where they grew up (Boyd, Lankford, Loeb, & Wyckoff, 2005; Reininger, 2012), the fact that lower percentages of students from urban and poor schools receive bachelor's degrees puts these schools at a recruitment disadvantage (Reininger, 2012). Additionally, low achieving schools face a serious attrition problem; even among schools with high concentrations of students of color and students living in poverty, those with lower-achieving students have greater problems with educator retention (Guarino et al., 2011; Hanushek, Rivkin, & Kain, 2004). Patterns of the distribution of school administrators follow these same trends, such that some schools, like those with high proportions of students of color, struggle to retain school administrators (Baker, Punswick, & Belt, 2010; Clotfelter et al., 2007; Gates, Ringel, Santibañez, Chung, & Ross, 2003; Loeb, Kalogrides, & Horng, 2010).

Policymakers and practitioners have attempted to correct the problem of inequitable distribution of educators across schools in various ways. For instance, the federal government and some states have implemented student loan forgiveness plans for educators who work in hard-to-staff areas (National Council on Teacher Quality, 2014; Office of Federal Student Aid, n.d.). Other efforts to address this issue include residency programs that specifically place teachers and administrators in schools that have struggled with recruitment and retention (Berry, Montgomery, Curtis, Hernandez, Wurtzel, & Snyder, 2008). One prominent attempt to address staffing difficulties in certain types of schools has been to provide bonuses to educators who move to or remain in hard-to-staff schools. These

incentives may stand alone or may be embedded within more multi-faceted educator incentive plans, the initiatives at the center of this study and the focus of the next section of this chapter.

An Attempt to Address Human Capital Issues: Educator Incentive Plans

While a variety of factors have likely contributed to challenges related to measuring and investing in educator excellence and the inequitable distribution of educators across schools, the current salary structure for educators is frequently cited as a driver of human capital problems in education (Kelley, 1997). Teachers' salary schedules provide pay increases based on years of experience and on attainment of degrees; consequently, critics of these schedules argue that they reward "membership, longevity, and course-taking" (Kelley, 1997, p. 25) over performance or quality. Reliance on traditional salary schedules may be problematic, observers contend, because as "teachers age and move down (experience) and across (education) salary schedules, school districts will find themselves devoting ever larger expenditures to schedule-driven pay increases that are unlikely to have any significant effect on student achievement" (Podgursky & Springer, 2007, p. 944).

Proponents of rethinking traditional salary schedules have offered a variety of alternative compensation proposals, including front-loading teacher pay by providing large raises to teachers early in their careers (Vigdor, 2008) and completely restructuring teacher compensation systems into comprehensive, tiered structures of career advancement (Johnson & Papay, 2009). In addition, reformers have called for the creation and implementation of educator incentive plans. In the following sections, I provide information about educator incentive programs. First, I outline the theory of action behind educator incentives. Then, I discuss issues related to the design of educator incentive plans. In this section, I pay a great

deal of attention to the different bases for awards that incentive plans might adopt, since I chose educator incentive plans to include in this dissertation based on their bases for awards. I next describe research on issues related to the implementation and effectiveness of extant educator incentive programs. Finally, I turn to a discussion of the Teacher Incentive Fund (TIF), a federal grant program that provides monetary support for the creation and implementation of educator incentive plans across the country.

Theory of action behind educator incentive plans. Educator incentive plans provide targeted monetary awards to current and potential educators in an effort to change their behavior (or to reinforce currently-practiced desired behavior) and, ultimately, improve student performance. These monetary awards could come as supplements to the traditional educator salary schedule or they could supplant parts of or entire traditional compensation schemes. Often, program participants and incentive recipients are teachers, but building administrators and other school personnel (instructional and non-instructional) have also participated in some educator incentive programs. Some programs mandate that educators participate, while others allow potential participants to opt into or out of programs voluntarily.

Incentive plans vary in terms of who designed the program. In some cases, the districts or schools that implement the programs design their own programs, whereas in other cases, local implementers adopt an external model. A prominent external model – and the most common external model among recipients of TIF grants, which I discuss in more detail in a later section of this review – is TAP. According to a 2010 report, “TAP’s 5,000 participating teachers serve approximately 72,000 students and in 200 schools” (Rotherham, 2010, p. 83). The TAP model involves a teacher job redesign (which NIET calls “multiple

career paths” for educators), professional development, “instructionally focused accountability,” and performance-based rewards for teacher and administrator effectiveness based on student achievement measures and results from a performance evaluation (NIET, 2014). School systems (usually states or districts) that are interested in adopting the TAP model work with NIET to implement the program in their jurisdictions; schools within those systems must hold a vote on the implementation of the program and must apply to NIET in order to become TAP sites (NIET, 2014).

The theory of action behind educator incentive plans suggests that these programs might impact human capital and ultimately improve student achievement through two mechanisms. First, they could address issues related to measuring and investing in human capital by engendering a “productivity effect” (Glazerman, 2004, p. 2); that is, they could reward current or future educators’ for demonstrated performance or their participation in activities presumed to be associated with improved performance (Baumann et al., 2011). Educator incentive programs might impact educators’ performance by paying educators for their contributions to improved student achievement, rather than for years of experience or the acquisition of graduate degrees. Programs may also impact performance by encouraging educators to participate in professional development, job expansion, or job redesign opportunities, which might increase their ability to improve student outcomes (Malen et al., 2009).

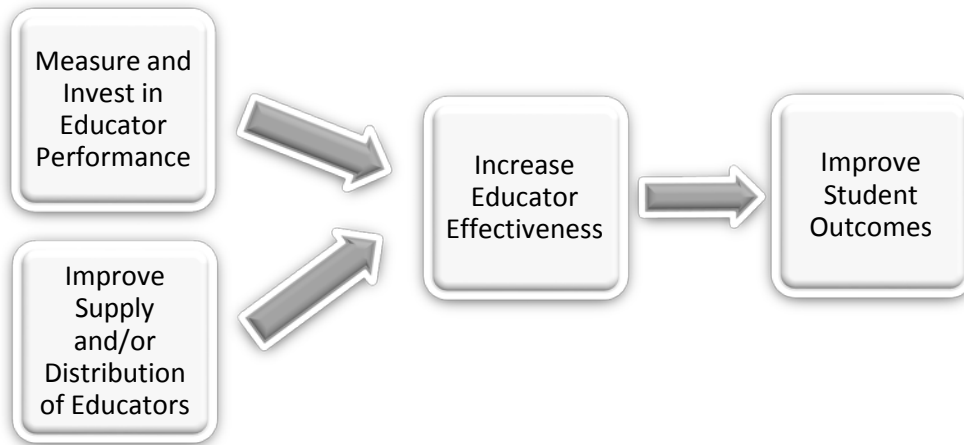
Second, programs (or parts of them) could impact human capital issues by affecting the supply and distribution of educators (Malen et al., 2009). In terms of supply, the financial awards associated with these programs could generate a “composition effect” by “inducing more talented individuals to enter and remain in teaching positions” (Glazerman,

2004, p. 2). That is, high-quality prospective employees who value the opportunity to receive compensation based on performance may be motivated to become educators in a system where educator compensation is tied to educators' impact, whereas these same high-quality potential employees (or, at least, fewer of them) may not join the educator labor market given current compensation practices.⁷ In terms of distribution, these programs could be structured to provide educators with a financial award that might persuade them to “make job choices that will result in a more equitable distribution of high quality staff” across schools, grades, or subject areas (Malen et al., 2009, p. 2). That is, incentives could encourage current and potential educators to take positions in schools that traditionally struggle with recruitment and retention or in subjects that are traditionally hard-to-staff (like mathematics, science, and special education).

These productivity and distributive goals are not mutually exclusive; in fact, they are often found together in incentive plans. Furthermore, a productivity/performance award may theoretically, in and of itself, serve to enhance supply; for instance, talented individuals who might otherwise not have become teachers due to dissatisfaction with current educator compensation policies might become teachers in a system where they will be paid based on their performance. However, despite the overlap between these two mechanisms, they are conceptually distinct and could be addressed directly by different types of financial awards. Figure 1 provides a graphic representation of the theory of action behind educator incentives.

⁷ Note that this composition effect has, at least in theory, long term benefits for the educator labor market. This composition mechanism would take many years to have an effect, so its results would likely not be evident for quite some time after program implementation. See especially Hanushek and Linseth (2009) for an elaboration of this argument.

Figure 1. Theory of action behind educator incentive programs



Note: This figure is an adaptation of similar conceptual maps in Glazerman (2004, p. 4) and Baumann et al. (2011, p. 9).

Design features of incentive plans. Educator incentive plans vary on a number of dimensions. First, incentive initiatives vary in terms of who is eligible to participate in the program (Malen et al., 2009). Some programs limit participation to school administrators, others limit participation to teachers, and still others are open to both administrators and teachers. Among programs that allow teachers to participate, plans may restrict eligibility to particular types of teachers (e.g., those in tested subjects and grades) or may be open to all teachers. Some programs expand eligibility and allow non-teacher instructional staff, support staff, and other staff to participate (Humphrey et al., 2012; Malen et al., 2009). Some incentive initiatives allow eligible participants to volunteer to join the programs, while other programs mandate program involvement (Malen et al., 2009). The level at which eligible participants can earn awards also varies: Some programs stipulate that eligible participants can earn awards as individuals, whereas other programs allow participants to earn awards collectively, such as when programs award groups of participants or entire schools (Glazerman, 2004; Malen et al., 2009; Podgursky & Springer, 2007).

Second, programs vary in terms of the nature of the award (Malen et al., 2009). Plans could provide awards that supplement educators' base salary, or plans could be part of a new compensation structure wherein the incentive pay constitutes educators' entire salaries (Glazerman, 2004). Incentive plans could provide participants a bonus (paid out all at once or spread over time), or they could increase participants' salary (Glazerman, 2004; Malen et al., 2009). The nature of the award in incentive plans also varies in terms of its size; some programs offer incentives that are a small percentage of current educator salary, while other programs offer relatively large incentives (Glazerman, 2004; Podgursky & Springer, 2007).

Third, incentive plans can vary in terms of the basis for financial awards (Malen et al., 2009). Because I categorized incentive programs by bases for award and chose from among the categories to select incentive plans to include in this study, understanding the potential bases for awards in incentive plans is central to this dissertation. Accordingly, I provide a more detailed explanation of potential bases for awards in the next section.

More on program design: Potential bases for awards in incentive plans.

Incentive plans can provide payments to educators based on three distinct types of awards, each of which is related to one of the major human capital issues outlined at the beginning of this chapter (identifying and measuring performance; investing in human capital; and impacting the supply and distribution of educators). The following paragraphs address each of the three categories.

Demonstrated performance. First, plans might capitalize on new approaches to identifying and measuring educator quality in an attempt to reward educators for demonstrated performance. In many cases, these awards are based, at least in part, on educators' contribution to student outcomes, which is often, though not always, measured by

student achievement on standardized tests. Student achievement may be determined in absolute terms, based on achievement of some level of proficiency, or on value-added terms, based on students' growth or actual versus predicted scores on standardized tests (Humphrey et al., 2012). Awards may also be based on SLOs, reduced discipline referrals, increases in graduation rates, or improvements in student satisfaction of school culture. Contributions to positive student outcomes may be measured at the school level; the group, grade, or team level; the classroom level; or some combination of these (Heneman, Milanowski, & Kimball, 2007; Humphrey et al., 2012). Programs may also allocate performance-based awards for high scores on an observation of performance (Malen et al., 2009). Many current programs that base awards (or parts of awards) on performance observations have abandoned checklist-style evaluations in favor of more comprehensive standards-based evaluations like the *Framework for Teaching* developed by Charlotte Danielson (Danielson, 2007) or the TAP *Teaching Skills, Knowledge, and Responsibilities Performance Standards* (NIET, 2014).

Investments in or extensions of practice. Second, programs might allocate awards to educators for investments in or extensions of practice. Among these types of awards are payments for educators' knowledge and skills, demonstrated by activities like earning advanced degrees or obtaining National Board for Professional Teaching Standards certification (Heneman, Milanowski, & Kimball, 2007; Milanowski, Odden, & Youngs, 1998; Podgursky & Springer, 2007) and payments for educators' engagement in professional development activities (Malen et al., 2009). Some programs also provide financial incentives for educators who undertake job expansion opportunities by performing special projects that might help educators or students perform well. Other programs offer and provide rewards for job redesign opportunities that actually reconceptualize the work of educators.

Educator supply and distribution. Third, educator incentive programs might allocate awards in an attempt increase the supply of effective educators or to alter patterns of educator distribution by recruiting and retaining educators in persistently hard-to-staff schools or subjects. Some programs attempt to achieve this end by providing explicit bonuses for working in hard-to-staff schools or subjects. Other programs might lack a separate hard-to-staff bonus but might instead locate incentive projects only in specific schools, thereby creating a *de facto* hard-to-staff program component. Either way, the goal is increase the supply of high-quality educators and to encourage educators to work in locations or take on assignments that they might otherwise not have (Heneman, Milanowski, & Kimball, 2007; Humphrey et al., 2012).

Issues related to educator incentives in practice. The previous two sections outline the theory behind educator incentives and the potential bases for awards in educator incentive plans. This section shifts from these conceptual considerations to an empirical discussion of issues related to the implementation and effectiveness of specific educator incentive plans. This section helps to contextualize the current study by explaining how projects like those at the center of this dissertation have played out in practice. The paragraphs on implementation are particularly relevant insofar as they shed light on the resources required to implement educator incentives projects and the issues that administrators and teachers have faced as they have attempted to leverage those resources into successful projects. The section on effectiveness is relevant to the current study insofar as it creates a space for discussion surrounding why educator incentive programs might be attractive to the policymakers and practitioners who support their adoption; furthermore, as more information on program

effectiveness develops, studies like these may serve as a potential basis for future cost-effectiveness studies of these types of reforms.

Implementation of educator incentive plans. Studies of the implementation of educator incentives highlight several challenges associated with implementing these plans. A multi-year implementation study of one TIF grantee (Rice et al., 2012) categorized implementation challenges into four main categories: (1) stakeholder support; (2) measurement; (3) capacity; and (4) alignment. Because findings from studies of other educator incentives programs often fit into one or more of those categories, I organize the following paragraphs around those four main challenges.

Stakeholder support. Research on educator incentives suggests that these programs have faced challenges related to gaining and maintaining support from key stakeholders such as teachers, administrators, and their unions. Stakeholder support issues are important because programs that fail to obtain initially or sustain over time the support of these key stakeholders may be politically infeasible. They may also be difficult or impossible to implement with fidelity if key personnel are unable or unwilling to put time and effort into program work. Furthermore, stakeholder support issues can undercut the goals of incentive programs if they upset high-quality educators – the administrators and teachers that incentive programs aim to reward.

Many stakeholder support issues highlighted in the literature on educator incentives relate to communication shortcomings, which can undercut key stakeholders' support of the programs. For instance, studies of an educator incentive project in Prince George's County, Maryland, found that communication between project administrators and participating educators was a persistent challenge (Malen et al., 2009; 2011; 2015). Similarly, a report

regarding an educator incentive plan in Washington County, Maryland, found that clear communication between the district and school sites was difficult (Measurement, Inc., 2011), and a study of a state-supported program in Texas highlighted communication difficulties between the state and participating districts (Springer et al., 2010). Furthermore, studies of incentive plans in Ohio and New York City found that some participants still had misunderstandings of the projects even after they had been in place for a few years (MacAllum, Wells, & Ristow, 2011; Marsh et al., 2011). An early implementation report of cohort 3 Teacher Incentive Fund evaluation districts found that, after one year of implementation, project participants' understandings of the measures used to determine their awards and the size of their awards differed from district reports of these same topics (Max et al., 2014).

Other stakeholder support issues have extended beyond communication challenges. Concerns regarding project fairness have also threatened educators' support for incentive plans. For instance, educators in Prince George's County, Maryland, expressed concerns about whether or not requirements for participating in the incentive project and earning a payout were fair (Malen et al., 2009; Malen et al., 2011; Rice, Malen, Jackson, & Hoyer, 2015). Participants in an educator incentive plan in New York City expressed concerns regarding the composition of decision-making bodies and the extent to which teachers' opinions mattered in program planning and implementation. They also highlighted concerns over the fairness of the plan's payout structure (Marsh et al., 2011). The first implementation report of cohort 1 and 2 Teacher Incentive Fund grantees found evidence of fairness concerns surrounding how the projects addressed teachers without student test data; how the projects

linked educator performance to incentive pay; and whether or not project implementers were able to distribute awards accurately and without error (Humphrey et al., 2012).

Measurement. Educator incentives have also faced challenges associated with the projects' attempts to identify and measure educator performance. Some of these concerns have been related to stakeholder support issues; as outlined in the previous paragraphs, participants in a number of educator incentive projects were confused about performance measures or reported concerns regarding the fairness of the measures used to identify and assess educator performance.

Measurement issues have not only been related to communication problems or concerns about fairness, however. Incentive plans also have been accompanied by concerns over the extent to which the performance measures embedded within the programs accurately captured student progress or the quality of educators' work. Accuracy concerns have been linked to both test-based measures of educator performance and standards-based evaluations. For instance, research on an educator incentive project in Maryland found that some participants were skeptical that the student achievement measures presented an accurate portrait of their work (Malen et al., 2011). Additionally, researchers who studied educator incentives in several Ohio school districts noted that teachers reported that they preferred school-based rather than classroom-based measures due, among other reasons, to "suspicion and distrust of value-added metrics" (MacAllum et al., 2011, p. 56). Regarding standards-based evaluations, some studies of educator incentives have found that teachers – especially those who teach young children, who teach children with special needs, and who teach elective courses (e.g., art, physical education) – expressed concerns about the applicability of

the standards-based evaluation to their work (Malen et al., 2009, 2011; Measurement, Inc., 2012).

Capacity. Many studies demonstrate that incentive plans have struggled to create district- and school-level capacity to implement the multiple moving parts of the projects.⁸ Research on the implementation of an educator incentive project in Prince George’s County, Maryland, found evidence that the project required extensive district- and school-level capacity and that, despite multiple efforts to address these requirements, project administrators and participants struggled with project administration, implementation, and data management. Capacity issues continued to be pervasive well into the life of the program. Of particular note is that demands on educators’ time – related to the project as a whole but particularly associated with the new standards-based teacher evaluation system – were heavy and persistent (Malen et al., 2009, 2011, 2015; Rice et al., 2012). Concerns about increased workload associated with projects and their standards-based evaluations were echoed in an evaluation of another educator incentive project, where school-level administrators and teachers reported that participation in the project was “time-consuming” (Measurement, Inc., 2012, p. 25).

Additional capacity issues surfaced regarding the extent to which incentive projects would be able to sustain themselves after the expiration of external funding sources. Evaluations of multiple projects that had received federal Teacher Incentive Fund grants – four districts in Ohio and one in Maryland – found evidence that project participants and

⁸ While they are not studies of educator incentive plans, per se, studies of teacher evaluation systems are instructive because these systems are often part of educator incentive programs. For instance, research on the REACH teacher evaluation system in Chicago found that administrators had to spend a great deal of time implementing the new teacher evaluation system (Sporte et al., 2013), and a study on an intensive teacher recruitment/retention policy found that the amount of time that administrators spent on teacher evaluations increased during the implementation of the program (Chambers, Reyes, Wang, & O’Neil, 2014).

implementers lacked confidence in the sustainability of the projects beyond the life of the federal funds (MacAllum et al., 2011; Malen et al., 2011, 2015). Additionally, a first implementation report on the entire group of cohort 1 and 2 Teacher Incentive Fund grantees highlights sustainability as an important issue facing the grantees and reports the strategies that grantees had been pursuing in attempts to gather additional funds to sustain their projects. The implementation report notes that while several grantees secured additional external funding to continue their projects, “these sources of outside funding will themselves run out at some point [and] [g]rantees have been slower to make fundamental changes to build sustainability into their performance pay plan” (Humphrey et al., 2012, p. 53). An evaluation of a state-funded incentive program in Texas found that district-level project implementers expressed concerns over “insufficient and unstable state funding,” which, in some cases, led sites to discontinue their projects (Springer et al., 2010, p. 19, 27).

Alignment. Finally, research on educator incentive plans demonstrates that implementers of these projects need to pay attention to aligning the reform with other district and school priorities and initiatives. For instance, research on a TIF-supported educator incentive project in Maryland reported issues surrounding the project’s alignment with (a) broad district goals, (b) district management strategies, (c) instructional initiatives and programs, and (d) key features of the work carried out in schools. Despite multiple efforts to address each of these facets of alignment, the project still faced the challenge of seeming disconnected from the work of administrators and teachers, or, worse, adding more work to already overloaded educators and creating a situation wherein “the presence of multiple initiatives can undercut [educators’] ability to implement any of those initiatives effectively” (Rice et al., 2012, p. 919).

Effectiveness of educator incentive plans. Research on the implementation of educator incentives resides alongside research on the effectiveness of educator incentive plans. In addition to the ultimate goal of improving outcomes for students, educator incentive programs have intermediate goals of improving educator distribution or performance (Glazerman, 2004; Malen et al., 2009; Malen et al., 2011). Evidence regarding the impact of incentive programs on administrator, teacher, and student performance, as well as program effects on educator retention, distribution, and recruitment into the profession is emerging. In the following sections, I first summarize research regarding the impact of educator incentives on student achievement. Then, I turn to a discussion of research on intermediate outcomes, such as the recruitment or retention of high-quality educators and improvements in educators' practice.

Evidence of the impact of educator incentive plans on student achievement. Evidence on the ability of incentive projects to raise student achievement is mixed. In the following paragraphs, I first describe experimental evidence on two different incentive projects and then discuss non-experimental research on several projects.

Experimental research from two districts – one that provided bonuses based on individual teachers' performance and another that provided bonuses to entire schools based on school-wide student performance – did not find compelling evidence to suggest that the projects improved student achievement. In the Project on Incentives in Teaching (POINT) experiment, researchers randomly assigned a group of participating middle school mathematics teachers in one district into treatment (eligible to receive an incentive) and

control groups.⁹ Researchers found only a modest and inconsistent impact of teacher eligibility for an incentive on student achievement; while treatment teachers' students' scores were better in the fifth grade (the youngest students in the study), the researchers did not find similar results for other grades, and the effects for the fifth graders did not persist over time (Springer et al., 2012). A second experiment, the Schoolwide Performance Bonus Program (SPBP), took place in New York City and provided incentives based on school-wide achievement to schools that had been randomly assigned the opportunity to participate in SPBP.¹⁰ Two studies of this program generally found no statistically significant positive impact of the program on student achievement (Fryer, 2011; Marsh et al., 2011); in fact, one of the studies found statistically significant negative effects on students' state assessment scores in treatment middle schools and on graduation rates in treatment high schools (Fryer, 2011).

Non-experimental research (i.e., research that did not rely on random assignment) on educator incentives provide additional insight into the potential impact of educator incentives on student achievement. A number of non-experimental studies have investigated TAP, a prominent educator incentive model. Studies of the TAP model report mixed and largely inconclusive findings on the relationship between the program and student achievement. In an analysis of “thirty-two TAP schools and roughly 1,200 non-TAP schools from two states over a five year period from 2002-03 to 2006-07” (Springer, Ballou, & Peng, 2014, p. 195), researchers used different model specifications (ordinary least squares regression, models

⁹ In the POINT experiment, while the researchers used random assignment to distribute the teachers to the treatment and control groups, teachers volunteered to be members of the pool of teachers eligible for the experiment.

¹⁰ In the SPBP experiment, researchers identified a pool of high-needs schools and randomly assigned these schools to the treatment group (had the opportunity to opt into SPBP) and control group (did not have the opportunity to opt into SPBP). Not all schools in the treatment group opted into and/or remained in the SPBP program.

that included school fixed effects, models with matched samples, and an ordered-probit selection correction model) and found that students in TAP schools demonstrated higher achievement than their peers in non-TAP schools, but only in elementary schools. In secondary schools, TAP effects were usually negative, sometimes statistically significantly so (Springer et al., 2014). A set of propensity score analyses that compared TAP schools to non-TAP schools, this time in Chicago, found that the program had no consistent, discernible relationship with student achievement (Glazerman & Seifullah 2010; Glazerman & Seifullah, 2012).¹¹ A third analysis of TAP programs in the Ohio TIF (OTIF) project,¹² which used a matched comparison, difference-in-differences design, found no relationship between TAP and improved student achievement (MacAllum et al., 2011).

Evaluations of several locally-developed educator incentives generally suggest slightly more positive (though sometimes limited) relationships between the programs and improved student outcomes. While a study of the Texas Educator Excellence Grant (TEEG) program found no evidence that the program had an impact on student achievement (Springer et al., 2009), a study of a different Texas program (District Awards for Teacher Excellence, or D.A.T.E.) found larger student achievement gains in participating schools, compared to non-participating schools (Springer et al., 2010). Additionally, findings related to the locally-developed OTIF projects found small positive associations between students' reading achievement scores and the incentive plans in one of the districts (MacAllum et al., 2011). A

¹¹ Glazerman and Seifullah (2012) used different models to estimate the relationship between TAP and student performance. While the authors found a potential positive impact of TAP on student achievement under some conditions, these findings did not hold under all conditions. Glazerman and Seifullah (2012) also report findings from an experimental design, where some schools were randomly assigned to begin implementing TAP one year prior to other schools. The authors found no impact due to an additional year of TAP implementation. Additionally, Glazerman and Seifullah (2012) report that implementation of TAP in these schools may not have been complete; after the third year of project implementation, NIET informed the district that project implementation did not adhere strongly enough to the TAP model.

¹² The initial OTIF project included four districts. Two of those districts implemented a TAP project, while the other two implemented locally-developed models (MacAllum et al., 2011).

study of Denver's ProComp program after its fourth year of implementation found little evidence that the program affected student achievement through increasing educator productivity and modest evidence that the program might have had a positive impact on student achievement by changing the composition of the local teacher labor market (i.e., attracting new, high-quality educators to work in Denver schools). Still, the authors cautioned against wholehearted attribution of teacher or student improvement to the ProComp program, since the findings "may also reflect other policies and contextual factors at play" in the district (Wiley, et al., 2010, p. 26). Propensity score matched comparison findings from multi-year evaluations (after the second, third, and fourth years of program implementation) of the Mission Possible program in Guilford County, North Carolina, suggest that the program had positive impacts on student achievement gains, but statistically significant findings were limited to single subjects and grades (6th grade math for years two and three; 7th grade math for year four; Bayonas, 2009; 2010; 2011).

Evidence of the impact of educator incentive plans on intermediate outcomes. While the ultimate goal of an educator incentive program is to improve student achievement, the theory of action suggests that a variety of intermediate goals – including the recruitment and retention of high-quality educators, the improvement of teachers' instructional performance, and the improvement of administrators' building leadership – could help bring about the ultimate goal of student achievement. The following paragraphs first present information about educator recruitment and/or retention and then present information about educator behavior.

Some research on the relationship between educator incentive plans and educator recruitment and retention reports positive, though generally small, associations between the

plans and desired outcomes. Early evidence from an experiment that involved cohort 3 Teacher Incentive Fund grantees suggests a small positive impact of participation in a performance pay program on retention. A higher percentage of principals and teachers in treatment schools (compared to educators in the control schools) reported that they remained in their schools because of TIF; still, the effect was small, since only 10 percent of principals and three percent of teachers in the treatment schools reported that they stayed in their schools because of TIF (Max et al., 2014, p. 79). The impact of the incentive projects on recruitment, however, was less clear. The study found that while a higher percentage of principals in the treatment schools reported that they used discussions of bonuses to try to recruit teachers to their schools, there was no difference between treatment and control schools' principals' success in actually recruiting educators to their buildings (Max et al., 2014, pp. 76-77). Another study, which focused on the ProComp program in Denver, presented descriptive evidence to suggest that teacher retention improved while the incentive plans were in place (Wiley et al., 2010). Regression discontinuity results from a study of an educator incentive program in Washington, D.C. found that during the second year of program implementation, low-performing teachers, who, under the terms of the incentive plan were at risk of losing their jobs, were more likely to exit the system, compared to more highly-rated teachers (Dee & Wyckoff, 2013).

Literature on the relationship between incentive projects and instructional performance also tends to highlight positive findings; evaluations of two district programs and one statewide program found perceived improvements in educators' practice and increased collaboration among educators (MacAllum et al., 2011; Measurement, Inc., 2012; Wiley et al., 2010). An implementation study of a district-level program in Maryland found

that program participants perceived the educator incentive program (or perhaps more accurately, the standards-based performance evaluation and inducements to engage in professional development that were embedded within the program) to have a positive impact on teacher instructional practice and administrators' ability to have meaningful conversations with teachers about classroom instruction (Malen et al., 2011). Regression discontinuity results from the Washington, D.C., study indicated that teachers who initially received high performance ratings, who would be eligible for permanent salary increases if they received high performance ratings for a second year in a row, demonstrated improved performance in the following year. Additionally, teachers who received low ratings in the second year of the program, and thus could face dismissal if they received low ratings the next year, demonstrated improved performance during the third year of the program (Dee & Wyckoff, 2013).

The studies I reviewed in the preceding paragraphs attempt to uncover the extent to which educator incentives can be linked to improvements in student performance, educator distribution, and educator performance. While some studies could discern no association between incentive plans and anticipated effects (particularly with respect to student achievement), some studies found effects on student achievement, and other studies suggested that the plans may have been related to other desired outcomes (e.g., educator retention or improvements in instructional performance). It is important to note that, in general, the studies I discuss above took place relatively early in program implementation. Some proponents of educator incentives argue that we should not expect to see program benefits early in program implementation because the theory of action behind incentive plans involves long term alterations to the educator labor market (see, for instance, Hanushek &

Lindseth, 2009). That is, the theory of action behind these programs suggests that they may not only promote current educators to behave in certain ways but may also alter the composition of the educator labor market by encouraging talented individuals who may not have otherwise considered education to enter the profession.

The Teacher Incentive Fund. Despite implementation challenges, alongside limited positive evidence regarding their effectiveness, and amid continued support of a promising theory of action, educator incentives remain popular policy options. In recent years, expanding numbers of educator incentive projects have been implemented across the United States due to financial support from the federal Teacher Incentive Fund (TIF). In this section, I provide an overview of the TIF grant program. Then, I present a brief description of the projects that have received TIF grants.

Overview of the TIF grant program. Congress created the TIF grant program through the Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act of 2006. Between the policy’s creation and fiscal year 2014, Congress appropriated over \$2 billion for grant awards and national activities (such as technical assistance to grant recipients and program evaluation).¹³ The Teacher Incentive Fund has the following four goals:

- “Improving student achievement by increasing teacher and principal effectiveness;
- Reforming teacher and principal compensation systems so that teachers and principals are rewarded for increases in student achievement;
- Increasing the number of effective teachers teaching poor, minority, and disadvantaged students in hard-to-staff subjects; and
- Creating sustainable performance-based compensation systems” (U.S. Department of Education, 2012d).

¹³ The total current appropriations amount differs from the total current grant award amount (table 1) for two reasons. First, not all funds appropriated for TIF must be used for awards; according to the statute, the U.S. Department of Education may use up to five percent of appropriations to TIF for national activities (Personal communication with TIF program personnel, 2013). Second, because the Department awards five-year awards to grantees, some of the awarded amounts will need to be funded by future allocations.

While the requirements for TIF grants have changed slightly over the life of the grant program, these priorities have remained constant. In general, TIF grantees must provide educators (administrators and teachers) in high-needs schools with additional compensation for improving student achievement. Grantees may also base awards on employment in hard-to-staff schools or subject areas and on educators' assumption of additional leadership opportunities (either job expansion opportunities, which provide educators the chance to perform extra work that aligns with their current job descriptions, or job redesign opportunities, which reconceptualize educators' work and allow them to take on roles that are distinct from those in their original job descriptions). Regardless of whether or not educators receive payments for professional development, TIF-supported projects must provide meaningful and timely professional development for administrators and teachers (Humphrey, et al., 2012; U.S. Department of Education, 2012a).

There have been four rounds of TIF competitions. Cohort 1 and 2 grantees (awarded in 2006 and 2007, respectively) were only required to include administrators in their programs and could choose whether or not to provide teachers the opportunity to participate. In cohort 3 (awarded in 2010), the Department of Education did require that grantees include teachers. Additionally, grantees had to base incentives for teachers on "an objective, evidence-based rubric for teacher evaluations" in addition to student achievement gains (Humphrey, et al., 2012, p. 3). During the application process, prospective cohort 3 grantees could opt to apply for the general TIF competition or for a national evaluation competition, wherein the grantees would agree to participate in a program evaluation sponsored by the U. S. Department of Education (Humphrey, et al., 2012). The 2012 round (cohort 4) included some additional changes. For instance, rewards for teachers who had "regular instructional

responsibilities” (U.S. Department of Education, 2012a, p. 12) had to be primarily based on classroom-level gains in student achievement (as opposed to grade-, team-, or school-level improvement). Further, applicants for the fourth grant administration had to provide evidence of “an LEA-wide human capital management system (HCMS) with educator evaluation systems at the center ... [and] LEA-wide educator evaluation systems based, in significant part, on student growth” (U.S. Department of Education, 2012a, pp. 11-12). Additionally, prospective cohort 4 grantees could apply for the general TIF competition or could choose to apply in a separate pool for educator incentive programs that focused on science, technology, engineering, and mathematics (U.S. Department of Education, 2012a).

Across the four rounds of grants, the TIF program has awarded approximately \$2.5 billion to 131 recipients (Humphrey et al., 2012; U.S. Department of Education, 2012d). Six of those recipients have left the program, either through voluntary withdrawals or through failure to meet grant requirements. Table 1 provides a breakdown of awards to grantees who have remained in the TIF program.

Table 1. Projected five-year TIF grant amounts, by cohort

<i>Cohort</i>	<i>Number of Awards^a</i>	<i>Low Projected Five-Year Grant</i>	<i>High Projected Five-Year Grant</i>	<i>Cohort Total Projected Five-Year Grant Amount</i>
Cohort 1	15	\$3,577,483	\$32,350,615	\$220,870,122
Cohort 2	17	\$1,058,058	\$26,328,669	\$199,559,714
Cohort 3	58	\$607,211	\$59,007,705	\$1,086,892,678
Cohort 4	35	\$4,530,500	\$62,282,839	\$986,560,954
Total Across All Cohorts ^b	125	\$607,211	\$62,282,839	\$2,493,883,468

Source: Personal communication with TIF program personnel and the Center for Educator Compensation Reform (CECR)

^aThis table does not include information on grantees that left the program: Mare Island Technical Academy (cohort 1), Lynwood Unified School District (cohort 2), the College-Ready Promise (cohort 3), Chicago Public Schools (cohort 3), New York City Department of Education (cohort 3), and Milwaukee Public schools (cohort 3). Information on grant closure can be found in Humphrey et al. (2012) and at <http://www2.ed.gov/programs/teacherincentive/apps/index.html> (accessed on June 17, 2014).

^b Recipients in later cohorts have not completed their five-year grant period, so they have not yet received their entire grants. Whether or not programs actually receive this amount depends upon sufficient appropriations to TIF by Congress.

For the first three cohorts, TIF “increasing share” requirements stated that the TIF grant awards could not be the only source of funds that supported the projects’ incentive payments. In cohorts 1 and 2, grantees were required to increase the share of non-TIF funds used to allocate performance-based awards such that, by the last year of the grant period, 75 percent of the funds used for awards had to come from non-TIF sources. For the third grant cohort, the TIF requirement no longer stated that 75 percent of performance awards had to come from a non-TIF source, but grantees were still required to increase the share of performance-based compensation that came from sources other than the grant each year (Humphrey et al., 2012). In contrast to the first three cohorts, cohort 4 grantees do not face a cost-sharing requirement (U.S. Department of Education, 2012a).

Overview of TIF-supported projects. TIF has funded a wide range of educator incentive projects, many of which were developed by the grantee that would eventually implement them. Some grantees, however, decided not to create their own projects but rather

chose to implement a plan that an external partner had already created. When the projects included external partners, the external partner was often TAP (which I describe above, in the section on the theory of action behind educator incentive projects). Seven of the 33 cohort 1 and 2 projects operated TAP; among the 62 cohort 3 grantees, at least 15 operated a TAP project (CECR, 2012); and at least three (and potentially more) of the 35 winners of cohort 4 grants planned to operate TAP (U.S. Department of Education, 2012b). Perhaps because of the varied nature of their origins, TIF projects reflect a variety of structures in terms of how they approach demonstrated performance, investments in or extensions of practice, and educator supply and distribution. The following paragraphs provide an overview of how TIF projects address these issues.

Demonstrated performance. TIF requires that grantees base awards on demonstrated performance. Most TIF projects base awards on multiple measures of demonstrated performance (i.e., test-based student achievement measures and other types of evaluations).

Cohort 1 and 2¹⁴ grantees were required to provide differentiated, performance-based compensation for school administrators, but they had the choice of whether or not to provide differentiated, performance-based compensation for teachers. Thirty-one of the 33 projects did decide to include teachers (Humphrey et al., 2012). All 33 projects used student achievement data in determinations of administrator effectiveness; of these:

- ten projects used a value-added model,
- 12 used some other type of growth model,

¹⁴ Findings in the following sections come from project evaluations sponsored by the U.S. Department of Education. I report findings for cohorts 1 and 2 separately from findings for cohort 3, because the studies used different units of analyses. The study on cohorts 1 and 2 focused on grantees, whereas the study for cohort 3 focused on participating districts (which does not translate evenly to grantees, because some grantees included multiple districts). Cohort 4 grantees are in the early stages of implementation, and the Department of Education has not yet released a study pertaining to these projects.

- one project based the award on student achievement levels, and
- ten used some combination of value-added, growth, and achievement levels

(Humphrey et al., 2012, p. 15).

Thirty projects used student achievement data in determinations of teacher effectiveness; of these:

- 12 used a value-added model,
- seven used some other type of growth model, and
- 11 used some combination of value-added, growth, and student achievement levels (Humphrey et al., 2012, p. 13).

Eighteen projects based administrators' performance pay on standards-based evaluations (Humphrey et al., 2012, p. 17), and 16 projects tied teachers' performance pay to performance on a standards-based evaluation (Humphrey et al., 2012, p. 15).

Cohort 3 grantees were required to provide differentiated compensation based on student achievement and observations for both school administrators and teachers. High percentages of participating districts met these requirements. For administrators:

- 92 percent of responding districts reported that they had used student achievement to determine administrator performance. More specifically:
 - 90 percent reported that they used growth measures¹⁵ and
 - 65 percent reported that they used student achievement levels, and
- 75 percent of responding districts reported that they had used observations to determine administrator performance (Max et al., 2014, p. 27).¹⁶

¹⁵ In the study of cohort 3 grantees, growth measures included value-added models and other methods for determining growth.

¹⁶ Findings for cohort 3 grantees were based on a survey of districts that received TIF grants. The study had an overall response rate of 90.7 percent (Max et al., 2014, p. B-3).

For teachers:

- 83 percent of responding districts reported that they used student achievement to determine teacher performance. More specifically:
 - 76 percent of responding districts reported that they used growth measures, and
 - 45 percent of responding districts reported that they used student achievement levels.
- Nearly all (98 percent) of responding districts had met the requirement to base measures of teacher effectiveness on observations (Max et al., 2014, p. 26).

In sum, these findings demonstrate that the majority of districts (over three quarters in all cases) did meet requirements to base administrators' and teachers' incentives on student test scores and standards-based evaluations.

Investments in or extensions of practice. Many TIF projects have included investments in or extensions of practice, including professional development, job redesign, and job expansion opportunities, and some projects have attached payments to these types of activities. Among cohort 1 and 2 grantees, 10 projects offered teachers payments for participating in professional development opportunities. Thirteen projects included a job redesign component whereby teachers could take on responsibilities as coaches, master teachers, or mentor teachers (Humphrey et al., 2012, p. 18).

Provision of professional development (regardless of whether bonuses were explicitly tied to participation in professional development) was a requirement for cohort 3 grantees. Few responding districts reported that they decided to tie bonuses to professional

development; only 16 percent did so for administrators, and only 28 percent did so for teachers (Max et al., 2014, p. 32). Few cohort 3 grantees included job redesign and expansion opportunities for administrators. Only 15 percent of responding districts reported that they provided bonuses to administrators for assuming additional responsibilities. Job redesign opportunities for teachers, however, were more common; about two-thirds of responding districts reported that they allowed teachers to serve as mentor teachers, and 55 percent of districts reported that they allowed teachers to serve as master or lead teachers. Many districts offered job expansion opportunities, including but not limited to activities like serving on a leadership team or becoming a department chair (Max et al., 2014, p. 32).

Educator supply and distribution. Many TIF projects have attempted to affect the supply and distribution of teachers, either by explicitly attaching bonuses to teaching in hard-to-staff subjects and schools or by locating the projects only in particular schools in the district (in an effort to attract educators to those schools rather than to other schools). Even when the projects were in all schools in a district, some grantees “reported, to varying extents, that they hoped TIF would give them a competitive advantage in the local labor market in which they are not perceived as the most desirable employer” (Humphrey et al. 2012, p. 17).

According to Humphrey et al. (2012), among cohort 1 and 2 grantees:

Five grantees (out of the 31 grantees that included teachers in their project) gave additional compensation to teachers for working in hard-to-staff schools, five grantees (out of the 33 that included administrators in their project) gave administrators incentive awards for working in such schools, and in eight grantees, teachers received awards for teaching hard-to-staff subjects. Additionally, five grantees (out of the 33 grantees) targeted higher need schools in their state or district for TIF, making their entire project a form of hard-to-staff bonus (p. 17).

Among cohort 3 respondents, 17 percent reported that they provided bonuses to teachers for teaching in hard-to-staff schools, and 24 percent reported that they provided bonuses to teachers for teaching in hard-to-staff subjects (Max et al., 2014, p. 32).

Summary: Human Capital in Education

The TIF grant program and the projects that receive TIF support exist in a landscape of policies that attempt to address human capital issues in education. In this section of the literature review, I have presented an overview of this landscape and the ways in which educator incentive plans fit into this arena. For instance, one major human capital issue surrounds the evaluation of educator performance. Educator incentives in general and TIF projects in particular attempt to address this issue by attaching payments to educators' demonstrated performance, often based on student achievement and standards-based evaluations. A second major human capital issue surrounds investments in educator capital; educator incentive plans aim to invest in or extend educator practice by providing opportunities for professional development, job redesign opportunities, and/or job expansion opportunities. Finally, a third major human capital issue surrounds ensuring an adequate supply of effective educators and distributing these educators across schools equitably and efficiently. Educator incentive projects seek to address educator supply and distribution by providing payments for working in hard-to-staff schools or subjects or by leveraging targeted project implementation (i.e., being located only in certain schools or districts) to encourage educators to work in settings they might otherwise not have chosen.

Research on educator incentive projects highlights that these programs face a variety of implementation challenges, particularly in the areas of stakeholder support, measurement, capacity, and alignment. Experiments (studies that used random assignment designs) on

program effectiveness generally do not suggest that the projects raise student achievement; non-experimental research, however, has found evidence that incentive plans may have positive (though, in some cases, limited) associations with improvements in student performance, educator distribution, and educator practice.

Perhaps due, at least in part, to the support from the Teacher Incentive Fund, school districts across the nation have adopted educator incentive plans. In the face of limited, suggestive evidence that educator incentive plans may have a positive impact on the composition of the teacher labor market (by inducing potentially-high-performing educators into the profession) and given that educator incentive plans have proliferated despite lack of conclusive evidence of positive impacts on student achievement and educator performance, it is important to have a more informed understanding of their costs. This dissertation adds to the body of research on educator incentives by performing a cost analysis of the implementation of these complex human capital reforms. In the next section of the literature review, I discuss in more detail the concept of cost and how other researchers have applied that concept to education research.

Conceptual Foundation: Opportunity Cost

This dissertation examines educator incentive plans through the lens of opportunity cost. In this section of the literature review, I rely mainly on scholarly (peer-reviewed) sources to provide background on opportunity cost. I also use information from a research center dedicated to the promotion of cost analysis in education. In this section, I first provide a definition of opportunity cost, and I explain how researchers have studied this concept. Second, I provide an overview of issues that researchers who investigate opportunity cost routinely need to address in their studies. Finally, I describe the concept of human cost.

Definition of Opportunity Cost

The fundamental concept upon which this study relies is opportunity cost, or “the value of all that must be sacrificed to do [an activity]” (Frank, 2008, p. 7). The pursuit of any activity requires resources – be they money or time or some other resources – and choosing to employ resources to engage in one activity means that it is no longer possible to employ those specific resources for another activity. Thus, the cost of the endeavor is the loss of the opportunity to pursue alternative activities and reap whatever benefits those alternatives might have yielded (Fowler & Monk, 2001). This view of cost is expansive; it encompasses the value of all of the resources – fiscal and non-fiscal – required to pursue a goal.

According to Levin and McEwan (2001),

Although this may appear to be a peculiar way to view costs, it is probably more familiar to each of us than it appears at first glance. ... In cases in which the only cost is the expenditure of funds that could have been used for other goods and services, the sacrifice or cost can be stated in terms of expenditure. However, in daily usage, we also make statements like, “It cost me two lucrative sales,” in the case of a salesperson who missed two sales appointments because he or she was tied up in a traffic jam. In some cases we may even find that the pursuit of an activity “cost us a friendship.” In each of these cases, a loss was incurred... (p. 44).

Because opportunity costs are comprised of all monetary and non-monetary resources required to achieve some goal, they are distinct from expenditures, or transfers of money from one party to another. The relationship between costs and expenditures varies. In some cases, costs are higher than expenditures. Costs outpace expenditures when the pursuit of a goal requires the investment of non-fiscal resources (e.g., time, effort, donated goods), over and above the investment of money required to achieve the goal. In other cases, costs are lower than expenditures; expenditures associated with the pursuit of an activity outpace costs when someone who pursues a goal spends fiscal resources unnecessarily, inefficiently, or frivolously and ends up using more resources than are actually required to achieve the

desired outcome. Finally, (as mentioned by Levin and McEwan, 2001, quoted above), costs might equal expenditures when the only resources required to pursue a goal are monetary resources and when the person who uses those monetary resources does so efficiently.

Opportunity costs may be borne by a variety of individuals. Understanding who bears the opportunity costs of an activity requires acknowledgement of the societal cost of an endeavor, or the total opportunity cost of that endeavor to society as a whole.¹⁷ Sometimes, only those people who are participating in the activity incur the opportunity costs. In cases like these, the total societal opportunity cost associated with the activity is simply the sum of the costs borne by all of the participants. Often, however, activities have an external cost, or “a cost that falls on people who are not directly involved in an activity” (Frank, 2008, p. 16). In these cases, the societal opportunity cost of the activity is the sum of the costs borne by participants *plus* all of the external costs associated with the activity.

Those who seek to study opportunity costs can engage in resource-cost studies. Resource-cost studies are distinct from fiscal analyses that rely on an accounting model, which systematically account for organizations’ actual expenditures and provide a function and object categorization of the items on which organizations spent their money.¹⁸ Resource-cost studies, on the other hand, systematically identify the resources required to pursue an activity (regardless of whether those resources are associated with actual expenditures) and calculate the opportunity costs associated with all of those resources (Chambers, 1999; Hartman, Bolton, & Monk, 2001). Resource-cost analyses rely on the “ingredients method” and require that researchers identify all of the components of the

¹⁷ Some economic literature refers to this concept as “social cost.” In order to ensure that this concept is not confused with the human cost category of social cost (which I describe in more detail below), in this dissertation I use the term “societal cost.”

¹⁸ In educational organizations, functions might include administration and instruction, and objects might include personnel, facilities, materials, and travel.

activity under investigation, catalog the full range of resources (or “ingredients”) necessary to carry out all of the activity’s components, and determine the costs associated with using those resources (Hartman et al., 2001; Levin & McEwan, 2001). Analysts can also use resource-cost studies to shed light on the distribution of costs across different members of society; they do so by determining which stakeholders (e.g., organizations, workers, taxpayers) contribute which resources to the endeavor and how much those resources cost (Levin & McEwan, 2001).

Different types of analyses (cost-effectiveness, cost-benefit, and cost-feasibility analyses) could result from a resource-cost study. Cost-effectiveness studies allow analysts to compare ratios of costs and effects across programs with similar desired outcomes. Cost-benefit studies allow analysts to understand whether and by how much the benefits (defined in monetary terms) of any intervention or set of interventions outweigh their costs. Cost-feasibility studies allow analysts to provide a systematic account of the costs associated with implementing a policy (Levin & McEwan, 2001). While these types of analyses answer slightly different questions and therefore explore the relationship between the costs and effects of educational programs in different ways, all three provide comprehensive information regarding the costs associated with the necessary resources for educational interventions; all but one (cost-feasibility analysis) also include information regarding program effectiveness.

While the field of education research may have been slow to adopt cost analysis as a lens through which to analyze educational interventions (Levin, 2001; Rice, 2002), opportunity-cost-conscious educational researchers have continued to advocate for an increased focus on the costs of educational policies. For instance, Levin and McEwan (2001)

provide a comprehensive explanation of how to apply systematic cost analysis techniques in a primer on the method, and Levin and Belfield (2013) explain the method and provide recommendations for cost studies. McEwan (2002) and Hummel-Rossi and Ashdown (2002) outline several criteria that would signal a high-quality cost template study, and Rice (1997) suggests possibilities for cost analyses and provides guidance on how to approach these studies. These writers argue for expanding the number of high-quality cost studies to which the research and policy communities have access, so that those who study and consider implementing various educational policies are able to understand the costs that accompany them.

Over time, cost analyses of educational initiatives have become more widely available. A number of cost studies provide information regarding the resources required to implement programs, the costs associated with those resources, and the implications of those findings for policymaking and policy implementation more broadly. For instance, Rice and Brent's (2002) analysis of the resources required to implement an alternative teacher certification program, Barnett (1985) and Masse and Barnett's (2002) studies of early childhood education programs, and Rice and Hall's (2008) investigation of National Board for Professional Teaching Standards certification all shed light on the opportunity costs that members of society bear in order to invest in the programs under study. In addition to providing information about societal opportunity costs, King's (1994) study about the costs associated with implementing prominent whole-school reform models and Rice's (2001) analysis of the costs associated with creating comprehensive community support networks for children highlight issues related to resource substitution. Levin, Catlin, and Elson (2007) and Hollands and colleagues (2014) investigate the ways in which variation in program

implementation affects resource use and, consequently, cost. In order to highlight how cost studies inform our thinking about opportunity costs, I briefly describe three of these studies below and use them in subsequent sections to illustrate how they illuminate programs' opportunity costs and deal with issues common to cost analyses.

Levin, Catlin, and Elson (2007) use the ingredients method to perform a resource-cost analysis of three adolescent literacy interventions (READ 180, Questioning the Author, and Reading Apprenticeship). The authors present a number of cost templates, or detailed tables of the ingredients necessary to implement the interventions and the costs associated with the ingredients. The templates outline costs for multiple sites that implemented each of the three programs in the study. The authors argue that (a) even for established educational interventions, variability in implementation exists across participating district and/or school sites; (b) variability in local program implementation impacts initiative resource requirements and, therefore, total and per-participant program cost; and (c) attention to implementation variability and associated resource variation is necessary in discussions of initiative adoption, implementation, and effectiveness.

Rice and Hall (2008) identify the opportunity costs associated with four National Board certification support programs. The authors explain the construction and interpretation of cost templates that outline (a) program-related costs (or costs related to running or participating in a National Board support program); (b) process-related costs (or costs related to engaging in the National Board certification process); and (c) other costs. The authors present a comparison of the costs associated with various models of National Board support programs to the costs of obtaining a master's degree (another popular option for teacher professional development and/or career advancement). In the study, the authors conclude

that while the costs of the National Board support programs varied across the initiatives in the study, the largest cost in all four sites was associated with uncompensated participant time. They also conclude that the National Board support programs were less costly than were various types of engagement (full-time, night-time, summer-time) in a master's program.

Hollands and colleagues (2014) pair cost information with data on program effects to present a cost-effectiveness analysis of five different high school completion interventions (Talent Search, Job Corps, JOBSTART, the National Guard Youth Challenge [NGYC], and New Chance). In this study, the researchers applied the ingredients method to determine the costs associated with implementing Talent Search in five different sites. They relied on previously-released studies of the costs associated with implementing the other four high school completion initiatives; however, because the prior cost studies did not rely on the ingredients method, the researchers modified the cost estimates in an attempt to make the estimates more comparable across programs. This study compares the cost-effectiveness ratios of each of the high school completion initiatives. It also provides insights regarding challenges associated with such comparisons, such the difficulty of comparing ratios across programs when cost data come from different sources or methods and the difficulty of comparing ratios across programs when there are slight variations in (what might appear to be) similar desired outcomes. The findings highlight that differences in program structure and target populations impact cost-effectiveness ratios. The authors argue that analysts should gather and analyze cost data at the same time as they gather and analyze implementation and effectiveness data; that researchers should provide site-specific cost, implementation, and effectiveness data; and that cost analyses that rely on the ingredients

method can help decision-makers choose among alternative educational initiatives by helping them match the programs' requirements with resources that are available in their contexts.

Issues Related to Conducting Analyses of Opportunity Cost

The three studies I describe above are resource-cost studies that use the ingredients method. As I mention above, those who engage in resource-cost studies move one step beyond the accounting categories of function (e.g., administration, instruction, support) and object (e.g., personnel, facilities, materials, travel) to identify the ingredients that fall within these broad function-object categories. Taking the extra step to identify the ingredients that are necessary to pursue an activity allows analysts to provide a more nuanced and accurate view of opportunity costs than is possible with budget-focused function-object analyses, which can distort costs by failing to distinguish them from expenditures and can hide the costs of activities by lumping them together with other activities (Levin & McEwan, 2001; Levin et al., 2012; Odden, Archibald, Fermanich, & Gallagher, 2002).¹⁹ According to Hollands and colleagues (2014), "By focusing on ingredients, this approach [the ingredients or resource-cost approach] begins not with a budget but with the details of the intervention and its resource requirements" (p. 309). Paying close attention to the activity or intervention itself and the ingredients necessary to pursue it puts the focus of the analysis squarely on cost (the value of all resources required to pursue a goal) rather than expenditure (the exchange of money from one party to another).

¹⁹ Here, I discuss analyses that rely on budgets in accounting terms. I do not mean to suggest that use of the accounting model is never appropriate nor do I mean to suggest that the accounting model is inferior to the resource-cost model. These two approaches simply have different goals: the accounting approach allows for a clear understanding of where expenditures have gone, while the resource-cost approach takes an economist's perspective and details opportunity costs associated with activities. For a longer discussion of the strengths and weaknesses of both the accounting and the resource-cost models, see Hartman et al., 2001.

Cost analyses require a comprehensive and nuanced understanding of the program under study. Researchers must be able to differentiate the intervention itself from other activities that, though possibly related, are distinct from the program under study. Especially in the case of programs that might be replicated (or, in the language of many school reform efforts, brought to scale), analysts need to be able to determine the program model and identify the extent to which the program's costs build incrementally on the costs of related activities and the extent to which they do not. It is through this detailed understanding of the programs (or, in many cases, program models) that scholars can identify the resources necessary to implement the intervention and evaluate the costs associated with those resources (Levin & McEwan, 2001; Rice & Hall, 2008).

One way that many resource-cost scholars organize the resources and associated costs of the program under study – and the way recommended by Levin and McEwan (2001) and Levin and Belfield (2013), prominent proponents of the ingredients method of resource-cost analyses – is through the use of a cost template, or a spreadsheet that systematically lists all of the types and quantities of resources necessary to implement the program (Levin & McEwan, 2001; Rice, 1997). This approach allows analysts to create a comprehensive yet transparent tool to systematically account for all of the ingredients (e.g., personnel, facilities, equipment and materials, travel and transportation, and other) required to implement a program and the costs associated with those ingredients. While opportunity costs are distinct from expenditures, analysts can use market values of goods and services to estimate costs once researchers have compiled a list of resources necessary to implement a program (Levin & McEwan, 2001). That is, it is possible to monetize most, if not all, of the resources required to pursue an activity and then report the sum of all of the monetized values as the

opportunity cost. Though some resources are challenging to monetize, this approach is useful because it provides a relatively understandable (though imperfect) measure of the sacrifices associated with pursuing a goal. Insofar as scholars who monetize resources to present a quantitative value for the opportunity costs associated with an intervention keep careful track of the decisions they made along the way that might impact their studies' findings, these quantitative values can be very useful in helping readers understand the magnitude of the costs associated with choosing to invest in one course of action over another. Additionally, the templates allow readers to see how altered assumptions and the imposition of local conditions might impact the cost of educational interventions (Rice, 1997).

Creating a cost template requires researchers to address a number of issues associated with estimating opportunity costs. These issues include: (a) comparability of costs across programs in different locations; (b) issues associated with time; (c) issues associated with program scale; (d) substitutability of resources; (d) the distribution of costs across stakeholders; and (e) program outcomes (Levin & McEwan, 2001). I briefly describe each of these issues below and provide examples of how the three studies I described above (Levin, Catlin, and Elson, 2007; Rice and Hall, 2008; and Hollands et al., 2014) addressed them.

Comparability of costs across programs in different locations. While cost studies are not generalizable in the way that statistical analyses are, they often deal with cross-program analyses and thus must produce comparable opportunity cost estimates for each of the programs in the study. Cost studies must address the fact that prices of resources often vary across geographical regions. For instance, personnel costs, which often drive the costs of reforms in fields like education (Fowler & Monk, 2001), can vary widely across locales.

While some differences in costs across locales are the result of policy decisions, other differences, such as differences in the cost of living in different geographical areas, are outside the control of local decision-makers. Cost analyses that seek to compare costs across programs in different locations need to address the issue of cost differences that are outside the control of the local policymakers (Taylor & Fowler, 2006).

Researchers can address this issue by substituting a standardized value for the more particular value that is only relevant to one geographical location. Each of the three studies that I describe above (Hollands, et al., 2014; Levin et al., 2007; Rice & Hall, 2008) addressed this issue by using national prices (or national averages, in the case of costs like salaries) in order to standardize values across programs in various locations. In an effort to recognize both the broad and particular applications of their research, Rice and Hall (2008) used national averages to assign values to resources to allow for cross-program comparison, but they also note that decision-makers can use the cost templates they created to inform local decisions by inserting context-specific values instead of national estimates (p. 347).

Issues with time. Cost comparability is impacted not only by geographical differences in the value of resources but also by temporal differences in the value of goods and services. Three issues with time (annualizing multiyear costs, dealing with inflation, and dealing with future costs) are particularly relevant to studies of opportunity cost.

Annualizing multiyear costs. When program implementers are able to use a resource over a period of several years, they only incur part of the cost of the resource each year. As resources like facilities and equipment age, they depreciate in value; that is, they become more and more “used up” as the years pass and are therefore less valuable over time. Furthermore, the undepreciated portion of the facility or equipment also represents an

opportunity cost to program implementers, since they have given up the opportunity to use the resources associated with these facilities or equipment to pursue some other activity (Levin & McEwan, 2001, pp. 66-67). Given these considerations associated with the multiyear nature of some resources, in order to obtain a one-year cost estimate (which aids in comparing across programs), those engaged in a cost analysis must account for the multiyear nature of resources.

In their cost analysis of multiple interventions aimed at improving adolescent literacy, Levin et al. (2007) provided a description of their approach to annualizing multiyear costs. Regarding resources used over multiple years of the reading interventions, the authors write,

...[U]sing proper costing techniques, these costs were annualized where appropriate. That is, only that portion of the cost of such ingredients that should be charged to a single year of use is included in these estimates. To annualize costs, we assumed five years of program implementation at a 5% discount rate. (p. 71)

The choices that the authors made regarding how to deal with the multiyear nature of resources reflect both depreciation and investments in the undepreciated portion of the resource. The assumption of five years of program implementation relates to depreciation; that is, this choice assumes that the resource will be “used up” in five years. The assumption of a five percent discount rate relates to the undepreciated portion of the resource; that is, if the program implementers had not chosen to purchase materials to implement the program, they could have saved the money and would have gained interest on that money. The authors then were able to use an annualization formula (see Levin & McEwan, 2001, pp. 68-69 for an example) to account for the multiyear lifespan of the resources required for the reading programs and obtain a single-year value associated with the resources in their cost study.

Dealing with inflation. A second time-related issue that cost analyses must face is inflation, or the phenomenon of rising prices (or “rate[s] at which money is exchanged for a

good or a service”) over time (Mankiw, 2010, p. 80). In order to compare costs across time, scholars need to “remov[e] the effects of inflation” from the analysis – or, in other words, they need to deflate the costs (Fowler & Monk, 2001, p, 57). Educational researchers can choose from a variety of cost deflators, including the Consumer Price Index (CPI), the School Price Index (SPI), the Net Services Index (NSI), the Inflationary Cost-of-Education Index (ICEI), and the Employment Cost Index (ECI). Each of these deflators has methodological and technical strengths and weaknesses; scholars must weigh these strengths and weaknesses to choose the deflator that is most appropriate for the particular study in question (Fowler & Monk, 2001). Regardless of the deflator used, when researchers study programs that have been implemented at different points in time, they must make the results of the cost analysis easier to understand and compare by explicitly controlling for inflation and providing the readers a temporal context for the numbers that they read in the report (Levin & McEwan, 2001).

One of the cost studies I describe above, Hollands and colleagues’ (2014) study of multiple high school completion programs, had to address the issue of inflation. In that study, the authors drew upon previously-released studies of the costs associated with implementing four of the five high school completion programs in the study.²⁰ In order to compare cost information from different years, Hollands et al. (2014) used the CPI-All Urban Consumers and the CPI for Urban Wage Earners and Clerical Workers to standardize cost data to 2010 dollars (p. 313). Doing so allowed the authors to compare the costs of all five high school completion programs, despite the fact that information regarding the value of the resources required to implement the interventions originally came from different years.

²⁰ Recall that the researchers performed the ingredients method to analyze the costs associated with Talent Search but that they relied on prior studies to gather cost information for JOBSTART, New Chance, National Guard Youth Challenge (NGYC), and Job Corps.

Dealing with future costs. Scholars who engage in cost analyses may need to discount future costs, or mathematically account for the fact that an expenditure in the future is less costly than an expenditure in the present. Present costs are more costly than future costs because those who pay for a resource now rather than in the future have lost the opportunity to use the money elsewhere in the meantime, such as in an investment or a savings account where they could have been earning interest (Levin & McEwan, 2001).

Again, Hollands and colleagues (2014) provide a good example of how to deal with future costs. One of the high school completion interventions in the study provided services to program participants over a number of years, whereas the others did not. The authors note that in order to compare the costs of the program that incurred both present and future costs to the costs of the programs that only incurred present costs, they needed to discount future costs in the multi-year program. To do so, they used the length of time over which the costs would be distributed and chose an interest rate to calculate the present value of the costs associated with the multi-year program (Hollands et al., 2014, p. 313; for an explanation of the formula used to calculate the present value of costs, see Levin & McEwan, 2001, p. 92). Determining the single-year, present value of future costs allowed the researchers to compare costs across programs that varied in when they had to expend resources.

Issues with program scale. Researchers who study the costs of educational interventions must also pay attention to program scale, or the relative size of the programs, and how program scale relates to the costs associated with the program. That is, while the total societal cost of a program is an important piece of information in its own right, it does not provide all of the relevant information about the costs of the program. A program with what might seem to be high total societal opportunity costs may be able to spread those costs

over a large number of participants; conversely, a program with apparently low total societal opportunity costs might spread those costs over a relatively small number of participants. Given these possibilities and the possibilities that programs could have increasing returns to scale (lower costs per unit of output at larger scale), constant returns to scale (the same cost per unit of output at large and small scales), or decreasing returns to scale (higher costs of output at larger scale; Frank, 2008), cost analyses should pay attention to issues of the size of the programs.

All three studies (Hollands et al., 2014; Levin et al., 2007; Rice & Hall, 2008) addressed issues of program scale by presenting per-student or per-participant costs associated with the programs that they analyzed. These per-participant numbers allow readers to understand not only the total cost of the programs but also how these total costs were spread over those who were served by the program. For instance, Rice and Hall (2008) reported the annual total societal costs associated with implementing the four National Board Certification programs in their study alongside the cost per participant. This juxtaposition allowed the reader to see that the program that appeared to be the least costly (at a total cost of \$279,128, whereas the rest of the programs each had a cost of over one million dollars) was the most costly per participant (with a per-participant cost of \$31,014, whereas the rest of the programs each recorded a per-participant cost of under \$25,000; Rice & Hall, 2008, p. 354). Thus, both pieces of information, in concert with each other, provide a much more complete picture of program costs than either piece of information would have been able to convey by itself.

Distribution of costs across stakeholders. Often, the costs associated with pursuing a course of action are unevenly borne by different members of society (McEwan, 2002).

Therefore, cost analyses should discuss the distribution of costs across different populations and stakeholder groups. In the case of education policies and practices, interested parties may include governments and boards of education (federal, state, and local), participants in the educational process (such as teachers, students, families, and community members), business partners, and foundations. Understanding who bears which costs and who reaps which benefits is important for consumers of cost analyses who need to determine if these programs are desirable and feasible in their contexts (Levin & McEwan, 2001; Rice, 1997).

In their analysis of the costs associated with National Board certification preparation programs, Rice and Hall (2008) present an account of the distribution of per-participant program costs across multiple stakeholders, including program staff (such as teacher mentors and directors, who contributed uncompensated time to the programs), the teacher candidates themselves, the state, the district, the school, the university, the union, a grant, businesses or business consortia, and the National Board itself (p. 360). By providing an account of the extent to which various groups bore the costs of the preparation programs, the authors were able to identify how the distribution of costs across stakeholders affected the burdens that different stakeholder groups in the various sites assumed when they implemented the programs.

Substitutability of resources. The set of resources required to pursue an activity – and therefore, incur an opportunity cost – are not necessarily fixed. That is, in some instances, it may be possible to pursue a course of action using more than one combination of resources. According to Rice (1997), “[i]n cases where the resources required [to pursue an action] are either unavailable or unproductive, substitutions may be feasible but may have significant implications for the cost estimates constructed” (p. 315). To the extent that the

price of one combination of resources is lower than another set of resources, the cost associated with pursuing the activity is reduced when those involved in the activity use the lower-priced set of resources (Frank, 2008). Additionally, to the extent that different people bear different amounts of the cost, depending on the set of resources used, those involved with pursuing the activity can alter the distribution of the cost to different stakeholders depending on which basket of resources they choose to use (Rice & Malen, 2003).

Levin and colleagues' (2007) description of the costs associated with implementing adolescent literacy interventions provides insight into resource substitution, particularly with respect to their discussion of the third reading intervention they studied (Reading Apprenticeship). The authors report that the two sites that implemented this intervention had very different costs associated with professional development due to the resources they employed to engage in this program component. One site relied upon trainers from the program developer to provide training and professional development for participating educators, while another site relied upon a "train-the-trainers" model, wherein only a small number of the district's educators received training from the (more expensive) program developers and then provided this information to their colleagues within the district (Levin et al., 2007).

Dealing with program outcomes. Opportunity cost analyses, by their very nature, require reflection on outcomes. According to Rice (1997),

The opportunity cost of a particular resource is the value of the next best use of that resource or the benefit forgone by using a resource a particular way. Consequently, a cost analysis involves a consideration of outcomes, while an expenditure analysis does not. (p. 311)

While all types of opportunity cost analyses require the acknowledgment that choosing to employ resources for one end means a loss of the ability to employ them for

another end, two types of cost analyses explicitly deal with program outcomes and incorporate them into study findings. Cost-effectiveness analyses, which provide ratios of costs to measures of program effectiveness, allow for comparisons of programs that have the same desired outcomes. Cost-benefit analyses, which provide ratios of costs to monetized benefits, allow for comparisons of programs with similar or different desired outcomes (Levin & McEwan, 2001; Rice, 1997). Due to their focus on both inputs and outcomes, both cost-effectiveness analyses and cost-benefit analyses shed light on programs' "bang for the buck," or the relationship between resources and program outcomes.

In their study of high school completion interventions, Hollands and colleagues (2014) pair cost data with outcome data to provide readers with an understanding of the relationship between the resources required to implement the programs and the programs' success in helping young people earn high school credentials. Because the programs in the study had similar desired outcomes – that is, improving the rates at which students completed high school – the authors were able to perform a cost-effectiveness analysis. In addition to presenting cost-effectiveness ratios for each of the five high school completion intervention models they studied, they also presented ratios of costs to program effects for different iterations of one of the programs (Talent Search), which demonstrates that even within one program model, differences in local implementation and resource use can affect programs' cost-effectiveness (Hollands et al., 2014, pp. 313-316).

An Additional Piece of the Puzzle: Human Cost

As the preceding sections make clear, opportunity cost is a comprehensive concept that encompasses all of the resources that are necessary to pursue a particular course of action and the value of those resources. Existing within opportunity costs are human costs,

or “reform-related sacrifices made by individuals and groups of individuals in [an] organization” (Rice & Malen, 2003, p. 639). Human costs represent an additional set of considerations that have implications for implementation and sustainability. Rice and Malen (2003) describe three types of human costs: (1) “task costs,” or “the time and effort that individuals in the organization expend to meet work demands” (p. 640); (2) “psychological costs,” or “burdens borne by individuals often in the form of a general loss of professional efficacy and self-worth” (p. 640); and (3) “social costs,” or “tolls paid collectively in the form of worker turnover and loss of community, trust, and collegiality between employees” (p. 640). The authors argue that these three types of human costs are interrelated and that they “may interact in important ways” (p. 640) such that the presence of one or more of these costs may heighten or even produce additional costs.

Rice and Malen (2003) provide examples of human costs in their examination of a school reconstitution initiative in six schools. This initiative required, in most cases, that the schools remove their principals and replace them with new leadership, and it mandated that all others who sought to staff the school – including those who had taught at the school in the previous year – would need to apply and interview for positions in the schools. Rice and Malen (2003) found evidence of task, psychological, and social costs associated with the reform. For instance, district and site personnel faced task costs associated with spending time and energy filling staffing vacancies, attending additional professional development sessions, and re-building schools’ operational capacity (p. 648). They also found evidence of psychological costs that were associated with a reform that teachers perceived to be an “assault of teacher competence and commitment” (p. 654). Finally, they also highlighted

social costs, which occurred when the reconstitution efforts undermined the stability of the workforce and reduced trust among colleagues (pp. 651-653).

Despite being difficult to quantify, human costs are real, and since they constitute part of what must be given up to pursue an activity, any attempt to discuss opportunity costs should recognize them. In fact, Rice and Malen (2003) state,

We contend that human costs are particularly relevant to personnel-dependent enterprises like education. Although the productivity of many industries is a function of resources other than personnel, most efforts in the field of education are contingent on the capacity and commitment of the people who live and work in schools. We also argue that human costs are critical in personnel-targeted interventions where the primary mechanism of reform is a dramatic change in the roles and responsibilities of those who work in schools... (pp. 639-640).

Since this dissertation focuses on educator incentives, which are educational human capital initiatives that clearly impact “the roles and responsibilities of those who work in schools,” I focus a portion of the analysis on the human costs associated with educator incentives.

Summary: Conceptual Foundation: Opportunity Cost

This dissertation relies on the concept of opportunity cost, or the “the value of all that must be sacrificed to do [an activity]” (Frank, 2008, p. 7). In order to capture the total societal opportunity costs associated with implementing three TIF-supported educator incentive projects, I engage in a resource-cost analysis that relies on the “ingredients” approach. Resource-cost studies commonly face a variety of issues, such as how to compare the costs of programs in different locations; how to address the ways in which time can impact the prices of goods and services; how to address the ways in which the size of programs can impact cross-program comparisons; how to acknowledge the potential substitutability of resources; how to discuss the distribution of costs across stakeholders; and how to deal with program outcomes (Levin & McEwan, 2001). In order to present a more

complete picture of the opportunity costs associated with the incentive initiatives, I also incorporate into this study the notion of human costs, or “reform-related sacrifices made by individuals and groups of individuals in [an] organization” (Rice & Malen, 2003, p. 639).

Summary

This chapter reviews several streams of literature in order to contextualize the current study. The first section of this literature review focuses on human capital in education. Within that section, I discuss three major human capital considerations (identifying and measuring human capital, investing in human capital, and addressing the supply and distribution of human capital). I then introduce educator incentive plans, which attempt to address each of these three considerations, and which are the focus of this dissertation. I explain the theory of action behind educator incentives, the potential bases for payments in incentive plans, and research on the implementation and effectiveness of these initiatives. Then, I provide an overview of the Teacher Incentive Fund (TIF), which supported all of the educator incentive plans included in this study. Because I use the lens of opportunity cost to analyze educator incentives, I use the second part of this chapter to introduce the concept of cost and other theoretical underpinnings of the analysis. I define opportunity cost, highlight issues common to cost studies, and introduce the concept of human cost.

This chapter serves to look outside the current study and explain the landscape in which it sits. The next chapter focuses squarely on the current study and provides details about the methods I used to perform a cost analysis on the implementation of TIF-supported educator incentive projects.

CHAPTER 3: METHODOLOGY

This chapter provides a description of the data and methods in this dissertation. I begin the discussion with an account of the steps I took to select three districts to participate in the study. Then, I present brief descriptions of the districts included in the study and their incentive projects. Next, I describe the field data that I collected on the educator incentive plans in these three districts. Finally, I outline how I (a) used the “ingredients” approach to resource-cost analysis (Levin & McEwan, 2001) to determine the magnitude of costs and the extent to which TIF and non-TIF sources bore those costs and (b) analyzed my field data to gather insights about the human costs of these reforms.

Site Selection Procedures

Site selection involved two main steps. First, I determined what types of TIF-supported educator incentive projects I would include in the study. Second, I selected actual projects to participate in the research. I chose to study three district-level (as opposed to state-level or charter-school-based) incentive plans in order to increase comparability across sites. Both site selection steps involved a variety of activities, which I discuss in the following paragraphs.

Selection of Project Types

As I describe in Chapter 2, the TIF program supports incentive projects that display a wide variety of designs. The goal for this study was to select sites that would simultaneously (a) exemplify elements of project design that are relatively common across TIF grantees (and therefore highlight potential project “models”) and (b) vary from each other in ways that would presumably affect project costs. In order to select the types of projects that I would include in the study, I reviewed a variety of sources that provided information about the

characteristics displayed in different TIF projects. I relied primarily on three sources to learn about TIF projects' characteristics: the U.S. Department of Education website, the Center for Educator Compensation Reform (CECR) website (which itself is associated with the U.S. Department of Education), and the first implementation report of the first two TIF cohorts, which was commissioned and funded by the U. S. Department of Education (Humphrey et al., 2012). I used this information to consider aspects of the projects that might impact their opportunity costs. Review of TIF information from these sources provided clear information about (a) whether the project was developed by the district that implemented it or whether it adopted an externally-developed model and (b) the project designs, particularly whether and how they based awards on demonstrated performance, investments in or extensions of practice, and educator supply and distribution. Because these distinctions could impact opportunity costs, I decided to focus on them. I discuss each in turn.

Locally-developed project versus externally-developed model. While many TIF projects have been developed locally, substantial numbers of TIF projects participate in TAP, a fairly standardized educator incentive model (see Chapter 2 for more detailed information regarding TAP and the number of TIF-supported TAP projects). Given the prevalence of both locally-developed projects and TAP projects among TIF recipients, I chose to include at least one type of each. The inclusion of both types of projects acknowledges the variety of projects that actually exists in practice; it also allows for an investigation regarding whether or not the choice to implement an externally-developed project versus an internally-developed project impacts the opportunity costs associated with project implementation (beyond development costs, which I do not capture in this analysis). For example, implementers of externally-developed models might face higher costs associated with

activities like traveling to developer trainings, whereas participants of locally-developed projects may not face the same travel requirements.²¹

Bases for payouts. As I outline in Chapter 2, educator incentive projects can base payouts on demonstrated performance, investments in or extensions of practice, and educator supply and distribution. In this dissertation, I chose to include projects that varied in terms of how they structured their investments in or extensions of practice components; I chose two projects that included a job redesign element and one project that did not. I included projects that differed along this dimension for two main reasons: impact on project cost and variability in project design.

First, project inclusion or exclusion of a job redesign may have implications for the costs associated with project implementation. Because job redesign projects alter the job descriptions of participating educators, they place an obligation on schools or districts to compensate educators for these new positions, either through bonuses or permanent salary increases. Job redesign projects also place an obligation on educators to invest time and effort in performing in ways consistent with the new responsibilities. Thus, variations in resource obligations brought about by inclusion or exclusion of job redesign components are worthy of investigation given the possibly sizeable and potentially long-term obligations associated with a job redesign element.

Second, while the presence or absence of job redesign in the TIF-supported educator incentives varied across projects, other aspects of project design (specifically, standards-based evaluations, reliance on student test scores, and professional development) did not vary

²¹ Conversely, it is possible that implementers of externally-developed models benefit from economies of scale, while their counterparts in locally-developed projects need to spend time and effort on initial project planning and ongoing project modification. Due to data limitations, however, this dissertation does not investigate initial project planning.

quite as much or lend themselves to clear-cut distinctions in project type. For instance, in the case of demonstrated performance, the majority of TIF projects across all cohorts used standards-based evaluations and student test scores as the bases for awards; nearly all projects from more recent cohorts included these types of evaluations. Additionally, providing professional development – another form of investing in or extending practice, along with job redesigns – was a requirement for cohort 3 grantees.

Based on these considerations, I decided that the three TIF projects I would select for in-depth investigation would be: (1) a district-implemented project that participated in an externally-developed model (TAP); (2) a project developed and implemented at the district level that included a job redesign component; and (3) a project developed and implemented at the district level that did not include a job redesign component.

Selection of Districts

Once I had determined what types of projects to include in the study, I began to identify districts as potential study sites. In addition to possessing the characteristics outlined above, each of the sites that I chose to include in the study would have to meet three criteria, which are either similar to criteria used in other studies (Rice & Hall) or align with recommendations from the cost analysis literature (Levin & Belfield, 2013; Levin & McEwan, 2001):

(a) *The projects needed to be clearly defined.* Interventions in this study needed to have recognizable project components. In order to capture accurately the costs associated with the projects, I needed to be able to identify which administrators' and educators' activities were associated with the project. If boundaries between the project in question and other functions of the district or schools had been too blurry, it

would not have been possible to discern what resources were required to implement the project. Furthermore, as Rice and Hall (2008) point out, “programs that are specified in such a way that they can be replicated ... can be understood as a ‘model’” (p. 344). If projects’ components are clear enough that the project models can be replicated in other sites, then cost analyses of those projects have increased utility, since they shed light on the resources needed to implement those models.

(b) *The projects needed to be fully implemented at the time of the study.* In order to gain realistic information about resources associated with project implementation, the projects included in this study had to be interventions that district and site personnel were currently putting into practice. If that were not the case (e.g., because the districts were still creating the project and planning for implementation, or because districts had discontinued use of the project), it would have been difficult to gather accurate information about the resources required to implement the incentive plan, which is a bedrock of resource-cost analysis (Levin & Belfield, 2013; Levin & McEwan, 2001). Such difficulties could have a major effect on findings related to project cost; faulty information regarding the resources required to implement the projects could result cost estimates that are drastically higher or lower than they should be.

(c) *They needed to be feasible, accessible study sites.* Projects in this study needed to be located in sites that were open to participation in the analysis. Logistically, it was necessary that I gain access to projects in order to speak with district and school personnel so that I could understand the projects and identify the resources required to implement them, since (as I note in the paragraph above) detailed knowledge of the

program under study is necessary for a resource-cost study (Levin & Belfield, 2013; Levin & McEwan, 2001). Thus, projects in this study needed to have personnel who were knowledgeable about the project and were willing to share that expertise with me.

In order to select sites for the study that met these criteria, I began to narrow down the pool of TIF grantees that I would consider for the study. I decided only to consider projects from the third TIF grant cohort. At the time of site selection, grants for projects in the first and second cohorts were nearing their end. Given the serious concerns related to sustaining the projects after the expiration of the TIF grant (see, for instance, Humphrey et al., 2012, which reports sustainability challenges – some with the potential to render projects unable to persist – for grantees from the first and second cohorts, pp. 53-54), I decided not to include grantees from these initial rounds of TIF. Conversely, grants in the fourth cohort were just beginning, and I would not have had an opportunity to study project implementation in many (or potentially any) of these sites, since a review of preliminary information about these grantees suggested that many projects were engaging in a planning year prior to implementation. Because all three project types were district-level initiatives, I removed projects that were not located in traditional public school districts (i.e., statewide projects or projects located in charter schools) from the list to arrive at a list of 38 potential study sites.²²

I then used a two-pronged approach to contact districts for consideration for the study. I sought the assistance of an expert on educator incentives who electronically introduced me to contacts in several districts; I also located project director emails on district websites and reached out directly to administrators in other districts. Either directly or

²² This list included Chicago Public Schools, New York City Department of Education, and Milwaukee Public Schools. Although these grantees eventually pulled out of the TIF grant (see notes on Table 1 in Chapter 2), I was unaware of this development at the time I created the list of potential study sites.

through the assistance of the educator incentive expert, I was able to contact 14 of the possible 38 districts on the list. I ultimately chose three sites based on the projects' alignment with one of the three project types and on districts' willingness to participate in the study. I call these three projects the TAP project, the job redesign (JR) project, and the non-job redesign (non-JR) project.²³ In the next section, I provide an overview of the districts where the projects in this study were located.

Overview of Study Sites

In the first part of this section, I present brief descriptions of the projects included in the cost analysis and the districts in which these projects are located. In the second part of this section, I highlight a number of benefits and limitations associated with the sites that I included in the study.

Site Descriptions

As I note above, I chose to study a TAP project, a locally-designed project with a job redesign component, and a locally-designed project without a job redesign component. I allowed other aspects of project design (such as eligibility, size of the awards, and whether the project was voluntary or mandatory) to vary; I also allowed district contextual factors (such as district and project size) to vary. In the following paragraphs, I provide an overview of the projects.²⁴ Table 2, located at the end of these site descriptions, presents a summary view of each project's key features and payment structures.

TAP project. The following paragraphs provide a brief introduction to the TAP project included in this study.

²³ One of the study sites allowed me to perform research in the district on the condition that I keep the name of the district confidential. Because I could not reveal one of the district names, I chose not to use the real names of any of the three districts.

²⁴ In order to maintain site confidentiality, in the descriptions of the study sites, I do not list the amount of the projects' TIF grants.

District and school context. The TAP project is located in a large suburban²⁵ public school district in the South.²⁶ According to a district official, this district serves urban, suburban, and rural students. The district's TIF grant application stated that the schools that would be included in the TIF grant project had higher-than-district-average percentages of students approved for free or reduced-price school lunch. A larger percentage of students in the proposed schools were below proficiency on student achievement measures, compared to the district average, and some of the proposed schools were deemed in need of improvement due to failure to meet adequate yearly progress (AYP) for several years. Several of the proposed schools had high percentages of teacher turnover; some of these schools had faced difficulties retaining principals as well. The district's TIF application attributed these staffing issues to an average teacher salary that is lower than the averages for surrounding districts.

Project description. Prior to applying for a TIF grant, the district had piloted TAP in a small number of schools, and the district applied for TIF in order to expand the program to additional schools. Not all schools in the district participate in the TAP project; TIF supports the implementation of TAP in a select number of the district's elementary, middle, and high schools. In total, TIF-supported TAP schools comprise less than 20 percent of all schools in the district.²⁷ Before they joined TAP, educators in the new, TIF-supported TAP schools had to vote on whether to become a TAP school. Once educators in the schools voted to

²⁵ This category aligns with the district's National Center for Education Statistics (NCES) Common Core of Data (CCD) locale code. The CCD definition of a large suburb is a "territory outside a principal city and inside an urbanized area with a population of 250,000 or more." For more information, see <http://nces.ed.gov/ccd/commonfiles/glossary.asp>.

²⁶ References to regions correspond to Census designations.

²⁷ The data in this study pertain only to the TIF-supported TAP schools, not the schools that had been implementing TAP prior to the district's receipt of the TIF grant. Additionally, for this project and for the non-JR project, I do not provide the exact number of schools that participated in the incentive projects in efforts to protect the confidentiality of the districts.

implement TAP, program participation was mandatory – all administrators and teachers within these schools had to participate in the TAP evaluations and professional development.

Like all TAP programs, school administrators and teachers participate in the project. Payments for demonstrated performance are based on standards-based evaluations and classroom-based and school-wide student achievement. Half of participants' performance awards depend on the results of their standards-based evaluation; the other half of educators' performance awards are based on student achievement. Principals in participating schools are eligible to receive up to \$10,000 in demonstrated performance awards, and assistant principals are eligible to receive up to \$5,000. The project has no set maximum teacher payout for demonstrated performance; rather, teachers receive payouts from a \$2,500-per-teacher pool based on their performance relative to similarly situated teachers in the same school (e.g., career teachers in tested subjects/grades, mentor teachers in nontested subjects/grades).

Investments in and extensions of practice in this TAP project include a job redesign (in the form of the creation of master and mentor teacher positions) and professional development for both administrators and teachers. Building administrators, master teachers, and mentor teachers (all members of TAP Leadership Teams, or TLTs) engage in initial and ongoing training on the TAP model within their schools, within the district, and at national conferences. Teachers in TAP schools participate in weekly professional development sessions called cluster meetings. While stipends are associated with serving as a master or mentor teacher (which averaged approximately \$11,000 for masters and \$4,500 for mentors in the 2012-13 school year), no explicit payments are associated with the initial and ongoing professional development.

Payments for the educator distribution component are in the form of \$3,000 retention bonuses to educators in select schools. The target population for this retention bonus changed across the life of the grant; initially, retention bonuses were available for educators of certain high school subjects, but by the third year of the grant (the year for this current study), those bonuses were available to educators only at TIF-supported TAP schools that had undergone a school restructuring reform.

JR project. The second project in this study is the locally-developed project that includes a job redesign for teachers. In this case, the TIF-supported educator incentive project operates in all schools in the district.

District and school context. The JR project district is located in a remote town²⁸ in the South.²⁹ According to the district's TIF application, over three-quarters of the district's students were approved for free or reduced-price school lunch. Compared to state averages, lower percentages of students in the district graduated from high school and higher percentages of students scored below proficiency levels on reading and mathematics assessments. In its TIF application, the district reported that it struggled to recruit and retain educators, which it attributed, at least in part, to limited opportunities for professional development and inadequate possibilities for career advancement.

Project description. While the JR project, as it was structured at the time of the study, came into existence with the receipt of TIF funds, it was not the first educator incentive program in the district. According to district documents and a district official, the JR project grew out of an earlier program that had been supported by state funds. All full-

²⁸ This category aligns with the district's National Center for Education Statistics (NCES) Common Core of Data (CCD) locale code. The CCD definition of a remote town is a "territory inside an urban cluster that is more than 35 miles [from] an urbanized area." For more information, see <http://nces.ed.gov/ccd/commonfiles/glossary.asp>.

²⁹ References to regions correspond to Census designations.

time school district employees are eligible to participate in the JR project and participation is voluntary. The TIF-supported JR project includes payments for demonstrated performance, which are based on a standards-based evaluation component, a student achievement component, and a school culture component, which includes criteria such as reductions in student discipline referrals, improvements in students' perception of school climate, and improvements in school-wide student achievement. Principals are eligible for up to \$5,000 in demonstrated performance payouts; half of this total is based on the results of their standards-based evaluation and the other half is based on their schools' attainment of school culture goals. Assistant principals are eligible for up to \$2,400 (up to \$1,000 for results of standards-based evaluation; up to \$1,000 for student achievement, and \$400 for school culture); teachers are eligible for up to \$1,400 (up to \$500 for standards-based evaluation, up to \$500 for student achievement, and \$400 for school culture); and other school and district personnel are eligible for up to \$400 (school culture, for school-based employees, and district-wide student achievement, for district employees).

The JR project provides a variety of opportunities for educators to invest in or extend their practice. Teachers have access to a job redesign component wherein master teachers and peer coaches serve a finite term and, presumably, return to the classroom. That job redesign component is accompanied by a payout of \$3,000 (for master teachers) or \$1,300 (for peer coaches). Additional opportunities to invest in or extend practice also exist. Different types of employees are able to pursue these opportunities and are therefore eligible for different types of incentives. School administrators and teachers both participate in professional development, although only teachers can receive a payout for participation. Many professional development opportunities are reserved for teachers, who have access to

payments for becoming the sponsor of an extracurricular activity, for becoming a department- or grade-level chair, for obtaining National Board certification, or for leading professional development sessions. One opportunity (performing a collaborative project that involves students in school improvement) is open to teachers, assistant principals, and other certified district personnel. The final opportunity (an attendance bonus) is open to all employees who participate in the JR project.³⁰ Given the differential access to the opportunities, the potential payout amounts vary across different categories of personnel. Principals are eligible for up to \$500 for investments in or extensions of practice, assistant principals are eligible for up to \$2,166, teachers are eligible for up to \$4,966, and other personnel are eligible for up to \$2,166.

While the district in which JR project is located also offers a recruitment bonus to new teachers, the new educators would receive this payment regardless of whether or not they chose to participate in the JR project. Therefore, I do not include this recruitment bonus as part of the costs associated with implementing the JR project.

Non-JR Project. Unlike the first two projects in the study, the third district's educator incentive project does not include a pathway for teachers to become master or mentor teachers or to participate in another type of job redesign. The following paragraphs describe the third project in more detail.

District and school context. The non-JR project is located in a midsize suburban³¹ public school district in the South.³² According to the district's TIF application, the

³⁰ I include the attendance bonus in the discussion of investments in or extensions of practice because job attendance seems to be a minimum requirement of improving one's job performance.

³¹ This category aligns with the district's National Center for Education Statistics (NCES) Common Core of Data (CCD) locale code. The CCD definition of a midsize suburb is a "territory outside a principal city and inside an urbanized area with population less than 250,000 and greater than or equal to 100,000." For more information, see <http://nces.ed.gov/ccd/commonfiles/glossary.asp>.

³² References to regions correspond to Census designations.

percentages of students approved for free or reduced-price school lunch at the schools that were proposed to participate in the non-JR project ranged from 45 percent to 85 percent, and 60 percent of the proposed schools failed to make AYP in the 2009-10 school year. The grant application reported that, in general, compared to district averages, higher percentages of teachers in the target schools had standard certification and lower percentages of teachers in the target schools had advanced certification.

Project description. The non-JR project is new to the district. The TIF grant application documents suggest that district officials hoped to design the project so that it would align with the state's forthcoming new educator evaluation structures. Not all schools in the district participate in the non-JR project; it operates in just over 10 percent of the district's schools and includes only elementary and middle schools. Building administrators in non-JR project schools have to participate, but teachers can voluntarily opt in.

The project includes payments for demonstrated performance (based on standards-based evaluation and school-wide and classroom-based student achievement). Administrators in non-JR project schools are eligible to receive a performance payout of up to \$8,000; participating teachers are eligible for a performance award of up to \$5,000. All non-JR project educators (school administrators and teachers) are eligible to receive payouts based on the results of their standards-based evaluations and on student achievement. Additionally, part of school administrators' performance payouts are associated with improving student behavior outcomes (increasing attendance and reducing discipline referrals). While half of teachers' performance payouts are based on standards-based evaluations and half are based on student achievement, 45 percent of administrators' payouts

are based on results of their standards-based evaluations, 50 percent are based on student achievement, and five percent are based on improvements in student behavior outcomes.

The non-JR project also includes opportunities for investment in or extension of practice. Both administrators and teachers participate in professional development, which can take a variety of forms. While administrators do not receive payment for professional development, teachers receive \$25 per hour for participating in professional development. Teachers have an additional opportunity to extend their practice by serving as district-to-school communication liaisons, and they can receive a payment for acting in this role.³³ Because this activity does not fundamentally alter the job description of the teachers who take it on (the hallmark of a job redesign activity, as defined by Malen et al., 1988; see Chapter 2 for more information), I consider it to be only what Malen et al. (1988) term a job expansion activity. That is, the teachers are able to take on more responsibility, but at the core, their jobs as classroom teachers remain the same.

The non-JR project also includes retention bonuses for both administrators and teachers who remain in the project in good standing.³⁴ Building administrators' retention bonuses are \$2,000. Teachers' retention bonuses increase each year they remain in the project; these bonuses start at \$2,000 for teachers' first year, increase to \$4,000 for teachers' second year, increase again to \$6,000 for teachers' third year, and increase again to \$8,000 for teachers who remain in the non-JR project for four years.

³³ In the fourth year of the grant (the 2013-14 school year), these teachers also became responsible for conducting informal peer observations. While this could be considered to be a job redesign, it occurred after the study year (2012-13).

³⁴ Administrators were not eligible for a retention bonus until the third year of the grant (the 2012-13 school year).

Table 2. Key project features and project payout structures: 2012-13

	<i>TAP Project</i>	<i>JR Project</i>	<i>Non-JR Project</i>
		<i>TEACHERS</i>	
<i>Maximum payout for demonstrated performance</i>	\$2,500 in pool per teacher ^a - Standards-based evaluation - Student achievement	\$1,400 - Standards-based evaluation - Student achievement - School culture	\$5,000 - Standards-based evaluation - Student achievement
<i>Maximum payout for investments in or extensions of practice</i>	<u>Job Expansion, PD, and Other:</u> None <u>Job Redesign:</u> <i>Master teacher:</i> average of \$11,000 <i>Mentor teacher:</i> average of \$4,500	<u>Job Expansion, PD, and Other:</u> \$4,966 <u>Job Redesign:</u> <i>Master teacher:</i> \$3,000 <i>Peer coach:</i> \$1,300	<u>Job Expansion, PD, and Other:</u> \$2,150 <u>Job Redesign:</u> None
<i>Maximum payout for impacting the supply and distribution of educators</i>	\$3,000 retention bonus	None ^c	Increasing amount depending on year in project (\$2,000 or \$4,000 possible in 2012-13)
<i>Maximum total payout</i>	\$19,611	\$9,366	\$11,150
		<i>SCHOOL ADMINISTRATORS</i>	
<i>Maximum payout for demonstrated performance</i>	<i>Principals:</i> \$10,000 <i>Asst. principals:</i> \$5,000 - Standards-based evaluation - Student achievement	<i>Principals:</i> \$5,000 <i>Asst. principals:</i> \$2,400 - Standards-based evaluation - Student achievement - School culture	<i>School administrators:</i> \$8,000 ^b - Standards-based evaluation - Student achievement - Student behavior goals

Maximum payout for investments in or extensions of practice	N/A	<u>Job Expansion, PD, and Other:</u> Principals: \$500 Asst. principals: \$2,166 <u>Job Redesign:</u> N/A	N/A
Maximum payout for impacting the supply and distribution of educators	N/A	N/A ^c	\$2,000 retention bonus ^d
Maximum total payout	Principals: \$10,000 Asst. principals: \$5,000	Principals: \$5,500 Asst. principals: \$4,566	Principals and asst. principals: \$10,000
OTHER PERSONNEL			
Maximum payout for demonstrated performance	N/A	\$400 - School culture or student achievement	N/A
Maximum payout for investments in or extensions of practice	N/A	<u>Job Expansion, PD, and Other:</u> \$2,166 <u>Job Redesign:</u> N/A	N/A
Maximum payout for impacting the supply and distribution of educators	N/A	N/A	N/A
Maximum total payout	N/A	\$2,566	N/A

^a In the TAP project, there was no maximum payout amount for teachers based on demonstrated performance. Teachers' payouts were allocated based on teachers' performance relative to other similarly situated teachers. The maximum payout amount in the final row of the table includes the maximum actual demonstrated performance teacher payout for the study year (2012-13).

^b In the first year, school administrators' demonstrated performance payouts could reach \$10,000.

^c While the JR project documentation discusses a recruitment incentive for teachers new to the district, any new teacher would get this incentive, regardless of whether or not s/he decided to participate in the JR project.

^d This bonus was not available to school administrators during the first year of implementation. Administrators became eligible for retention bonuses in the second year of implementation.

Benefits and Limitations of Study Sites

Two issues in the selection of sites for this study warrant attention. First, the designs of the projects in this study include some degree of overlap. For instance, all of the projects include standards-based evaluation, all base performance awards on school-wide and classroom-based student achievement, all include professional development, two have job redesign opportunities, two have job expansion opportunities, and two have retention bonuses. Still, it makes sense to investigate all three projects, because even though the projects' designs contain overlap in these broad categories, the projects vary in how they approach these components.

Second, it is important to note that all of the projects are located in the South and none are located in an urban district. While the projects in this study are not located in the type of community in which the majority of TIF projects are located (only 35 percent of TIF projects are in local education agencies (LEAs) not located in cities), they are more reflective of the geographic locale of TIF projects: over half (53 percent) of TIF grants across all four cohorts are located in the South.³⁵ These considerations notwithstanding, generalizability is not the goal of this study. Instead, this three-site resource-cost study can illuminate implications for policy and practice through capturing the costs associated with a range of project designs. Furthermore, the provision of cost templates that outline all of the resources required to implement the projects in question allows decision-makers in various locations to insert prices that reflect the value of the required resources in their own situations and get a sense of the opportunity costs of different reforms in their own areas (Rice, 2001; Rice and Hall, 2008). In the next section, I turn to a discussion of my data collection strategies, and in

³⁵ I calculated these percentages by reviewing grant information from the TIF office.

the subsequent section, I outline the ways in which I created cost templates that outlined the resources required to implement these three projects.

Data Collection

I collected a variety of data from the three sites. In this section, I provide information regarding this study's Institutional Review Board approval, describe the study's data, and discuss measures I took to ensure the reliability and validity of these data.

Institutional Review Board Approval

I conducted this study with the approval of the Institutional Review Board (IRB) at the University of Maryland, College Park. I received initial approval for the study on January 18, 2013 and continued approval on December 23, 2013 and December 10, 2014. Copies of IRB approval letters are in Appendix A. Part of the IRB approval process included IRB review of the data collection instruments (interview protocols and interviewee worksheets). Appendix B contains copies of IRB approved data collection instruments.

Consistent with IRB requirements, I adhered to accepted standards of research ethics regarding the consent and confidentiality of study participants. Prior to conducting any interviews with participants, I obtained informed consent; copies of IRB-approved consent forms are located in Appendix C. I protected the confidentiality of study participants by storing personally identifiable data (including signed consent forms as well as study data) in protected locations. I stored electronic files that contained personally identifiable data on an encrypted, password-protected drive, and I stored documents that contained personally identifiable information in a locked file box. I also protected the confidentiality of study participants in this written report. I did not use participants' names in this report, nor did I report the names of the school districts where they work. When necessary, I avoided

reporting detailed information about data in order to privilege the participants' confidentiality above specificity.

Overview of Data

I collected a variety of field data to gather information about the resources required to implement the incentive projects, the extent to which TIF and non-TIF sources supplied these resources, and the presence of human costs associated with implementing the projects. These field data come from two main sources: (a) document review and (b) individual and focus group interviews with key personnel.³⁶ I describe each below table 3, which presents a summary of field data and how they relate to study purposes.

Table 3. Relationship of field data to study objectives

<i>Study Objective</i>	<i>Field Data Source(s)</i>
Identify full range of resources required to implement incentive projects	Documents; Interviews with key personnel
Identify extent to which TIF and non-TIF sources supplied resources	Documents; Interviews with key personnel
Identify presence of human costs associated with project implementation	Interviews with key personnel

Documents. For all three study sites, I obtained TIF grant applications, summer 2013 TIF annual performance reports (APRs), individual-level administrator and teacher payout data for the 2012-13 school year, and project budget information (if it was not included in detail on the 2013 APR). I also collected district-level project handouts (e.g., policy manuals, brochures, and explanations of project payout structures), external project evaluations, and an article from a local newspaper.³⁷ In addition to these site-specific

³⁶ While I describe what types of data I collected in this section, I describe how I used these data later, in the section on data analysis.

³⁷ In order to keep the identity of the districts in this study confidential, I cannot provide the name of this newspaper or the author of the article.

documents, I collected appropriations and grant information on the whole TIF program from the TIF program office within the U.S. Department of Education.

Interviews. I conducted individual and focus group interviews with key personnel in order to get a sense of how the projects operated and the resources – fiscal and otherwise – required to implement them.³⁸ Key study participants from all sites included district administrators who managed the projects. When I spoke with these participants, I focused on district-level project administration in addition to what was required to implement the projects. I worked with district administrators to solicit study participation from building administrators and teachers who worked at schools that implemented one of the incentive projects in the study. In order to get a sense of the TAP model and what it might require of implementers, I reached out to and spoke with a representative from the external project developer. Finally, in order to gather information about the TIF program in general, I reached out to and spoke with representatives from the U.S. Department of Education.

I conducted interviews with a total of 26 participants between September 2013 and April 2014 (table 4). Nine of these participants were from the TAP project. In the TAP project, I conducted an in-person interview with a district administrator, a phone interview with a representative from the external project developer, an in-person interview with a school administrator, and an in-person focus group with six participants (one school administrator and two master teachers, one mentor teacher, and two career teachers). Nine participants were from the JR project. In the JR project, I conducted an in-person interview with a district administrator, in-person interviews with two school administrators, and an in-person focus group with six teachers. In the non-JR project, I conducted an in-person

³⁸ I discuss the data collection instruments I used to collect these data in the next section on the reliability and validity of data. Appendix B has copies of the data collection instruments.

interview with a district administrator, an in-person interview with a school administrator, and an in-person focus group with four teachers. I also conducted a focus group interview with two officials from the U.S. Department of Education. These interviews ranged from approximately 40 minutes to approximately two hours in length. With the permission of participants, I audiotaped all in-person interviews and created near-verbatim transcript logs from these audio recordings (see Merriam, 1998 for a discussion of transcript logs); I took detailed notes during the phone interview and created a record of the discussion immediately after we finished speaking.

Table 4. Overview of individual and focus group interviews

<i>Site</i>	<i>Number of individual interview participants</i>	<i>Number of focus group interview participants</i>	<i>Total</i>
<i>TAP Project</i>	3	6	9
<i>JR Project</i>	3	6	9
<i>Non-JR Project</i>	2	4	6
<i>U.S. Department of Education</i>	0	2	2
<i>Total</i>	8	18	26

Reliability and Validity of Data

High-quality studies need to ensure that the data are reliable and valid. Reliability, or the ability of a measure to “[yield] the same results when applied on repeated occasions to the same individuals” (Levin & McEwan, 2001, p. 110), ensures that the results of a study will be *consistent*. Validity, or the ability of a measure to “[bear] a close correspondence to the underlying concept that it is intended to reflect” (Levin & McEwan, 2001, p. 111), ensures that the results of a study will be *accurate*. I took a number of steps to enhance the reliability and validity of these field data.

In order to ensure that the data that I collected across sites were reliable, I used two types of data collection tools (Appendix B). One of these tools was a set of interview protocols that were comparable across sites. I only changed the protocols as necessary to fit project context (i.e., I did not ask about master/mentor teachers at the project that did not include a job redesign). During individual and focus group interviews at all three sites, I used the questions from the protocol to guide the conversations. The second data collection tool was a set of worksheets that I used to facilitate discussion with school-based personnel (administrators and teachers). I distributed these worksheets to study participants at the beginning of the interviews and allowed the participants to review or fill them out quietly before the start of the discussion. The purpose of these worksheets was to assist participants in thinking about the work they had to perform to implement the projects and the resource demands that were associated with this work. I used the same worksheets (again, only changing details such as the project's name and only including relevant project components) across sites. My use of the same protocols and worksheets across sites allowed me to collect data that were comparable across the three projects in the study.

I used two methods to enhance the validity of my findings. First, whenever possible, I triangulated data that I gathered through interviews with data that I gathered through documents. In general, when I found discrepancies between interview data and documentary data, I relied on data from documents unless the interview respondent specifically discussed reasons for an apparent mismatch between what s/he said and what I would find in documentary data and explained why the information that s/he provided was more trustworthy. Second, I engaged in a member check. That is, I shared site-specific preliminary findings regarding the resources required to implement the projects with the

district administrators at each of the study sites. I encouraged the district officials to provide feedback on the preliminary findings, and asked them to share such feedback especially if any of the findings did not fit with their experiences of project implementation. Feedback from district officials in two of the study sites³⁹ generally confirmed my findings and allowed me to provide additional clarity and nuance to the study's findings. For instance, in response to a question about how I calculated a particular study finding, I inserted additional detail and explanation regarding that finding into the text. Still, none of the district officials' feedback suggested that I had fundamental flaws in the data I used in this study.

Data Analysis

This dissertation presents findings regarding the magnitude of fiscal and monetized non-fiscal costs associated with TIF-funded educator incentive projects and the extent to which TIF and non-TIF sources bore those costs. It also involves a brief discussion of the human costs associated with these reforms. Because I used different approaches to obtain these sets of results, I discuss them separately below.

Magnitude of Costs and Division of Costs between TIF and Non-TIF Sources

The majority of findings from this dissertation stem from a resource-cost analysis that relied on the “ingredients” approach outlined by Levin and McEwan (2001) and used in studies such as those done by Hollands and colleagues (2014), Levin and colleagues (2007), and Rice and Hall (2008). This approach involves unpacking the variety of resources required to implement a program and realize its anticipated outcomes. In order to present a systematic account of the magnitude of opportunity costs associated with project implementation, I engaged in a multi-step process that aligned with the recommendations in Levin and McEwan (2001) and in the studies I described earlier (Hollands et al., 2014; Levin

³⁹ District officials in one of the study sites did not provide feedback on the preliminary findings.

et al., 2007; Rice & Hall, 2008). I discuss the process in detail in the next section, but in brief, I first created raw cost templates, or comprehensive lists of the resources necessary to implement the educator incentive projects and the site-specific prices of those resources. Then, I standardized these cost templates by replacing the site-specific prices with national average prices. This standardization of prices was necessary in order for me to identify costs across a range of project designs, since the prices of goods and services vary across geographical locations. The creation of these raw and standardized data templates required many steps; I explain these steps and the major decisions I made throughout the analytic process below and provide more detail in a decision rule document in Appendix D. The cost templates themselves are located in Appendix E.

The cost templates I created were also the foundation for analyses regarding the division of project costs across TIF and non-TIF sources. A note about the distribution of project costs is warranted at this point. While not all cost studies provide information about the distribution of costs across stakeholders, some do, and those that do discuss cost distribution provide valuable information regarding the distribution of burden associated with implementing a program. In general, cost studies that pay attention to the distribution of costs across relevant stakeholders provide cost burden information for an array of stakeholders. For instance, Rice & Hall (2008) describe how much of the cost of National Board Certification support programs was shouldered by program staff and participants (in terms of uncompensated time), various levels of government (state, district, school, and university), and other sources (union, grant, businesses, and the National Board itself; p. 360).

In this study, I do not present findings regarding the distribution of costs across all relevant stakeholders. Instead, I present findings regarding the proportion of costs shouldered by TIF and the proportion borne by non-TIF sources. I made this choice based on limitations in my data regarding the distribution of costs between districts and administrators/teachers within them. In interviews with project participants, I did not focus on the extent to which they performed project-related work during school and/or working hours and the extent to which they performed project-related work on their own time. When school administrators and teachers performed project work during the workday, their salaries (paid by the district) covered their time. When school administrators and teachers performed the work outside of working hours, they bore the cost of the work. Because I did not collect interview data on the issue of how much work participants performed during paid and unpaid time, and because my documentary data did not illuminate this issue, I was not able to discern the distribution of project costs between the districts and employees within them. I attempted to correct for this limitation by searching for previously-released studies that detailed the amount of time that educators spend on activities like evaluation and professional development during their contract hours and outside of them. Unfortunately, I was able to find no systematic, national-level studies that detailed the proportions of compensated and uncompensated time on these sorts of activities. Therefore, in this study, I am only able to present the TIF/non-TIF share of costs associated with the projects. While this decision does limit my findings, understanding of the proportion of costs borne by TIF is very useful information given the TIF requirement that grantees assume larger amounts of project cost over time⁴⁰ and given the fact that, as a grant program, TIF support will no

⁴⁰ Recall that only cohorts 1, 2, and 3 include an increasing share requirement (Humphrey et al., 2012). Cohort 4 does not include a cost-sharing requirement (U.S. Department of Education, 2012a).

longer exist for projects in the future. Knowledge regarding the extent to which TIF supports these programs is vital to planning for the eventual absence of TIF funds. I explore this issue in more detail in Chapter 5.

In the following paragraphs, I discuss the steps I took to create the raw and standardized data templates, which were the data organization and analytic tools that formed the basis for results regarding the magnitude of project costs and the distribution of those costs across TIF and non-TIF sources.

Raw data templates. Creating the raw data templates involved creating the list of required resources, determining the prices associated with those resources, and determining the TIF/non-TIF division of the costs. I discuss each below.

Creation of list of required resources. Prior to data collection, I used literature on educator incentive programs to create preliminary cost templates for each site; these spreadsheets unpacked the “ingredients” that were likely to be required to implement the incentive projects, based on findings from implementation studies of other incentive plans. I used Excel to create these spreadsheets, and I organized the required resources (such as personnel, facilities, materials, travel, and other inputs) that were associated with each of the project components (in this case, project administration, demonstrated performance, and investments in or extensions of practice, and educator supply and distribution components).

I refined these preliminary cost templates after I collected field data. I used information from participant interviews and project documents, such as annual reports and budgets, to refine the lists of resources that I included on each of the templates. I outlined these resources in “the most natural and descriptive units possible” (Rice, 2001, p. 468) so that the spreadsheets provided a clear and understandable account of exactly what resources

were actually required to implement the incentive plans. In this way, I ensured that each template contained a comprehensive account of the types of resources required to implement the projects for one year and the amount of each resource that those who were associated with the projects needed to perform their work.

Two considerations regarding the lists of resource I included on the raw data templates deserve attention. First, each of the three projects changed in some way from year to year. To the extent possible, I attempted to determine project components and related resources for the 2012-13 school year, because that is the year for which I had payout data for all three sites. Accordingly, this analysis only sheds light on the costs associated with implementing the projects during the third year of their TIF grant period. Second, while it would have been ideal to include not only annual operating costs but also project start-up costs and project evaluation costs in this study, lack of access to documents and key individuals at each site with information about these topics precluded me from including them.

Determining site-specific prices associated with required resources. After I had compiled the list of resources (personnel, facilities, materials, travel, and other) required to administer and implement the projects, I filled the raw cost templates with site-specific prices for each of the resources. Although I do not present these site-specific values in the findings section of this dissertation, I performed this step in order to provide the district officials with site-specific values for the member check (see above, in the section on data validity).

I gathered price information from a variety of sources. I used documentary data such as the projects' APRs, budget documents, project handouts, and payout records to gather prices for resources like district-level administrators (whose compensation was located on

grant-related documents), data management systems, professional development resources, and project payouts.⁴¹ I relied on vendor websites⁴² to obtain price information for materials like electronics. For the most part, when I assigned prices to educators' time, I used human resource information regarding average educator compensation (salary and benefits) in the districts that I obtained from correspondence with district officials or from online information posted by district and/or state educational agencies.⁴³ I converted the price of administrators and teachers to hourly prices (so that I could isolate the costs associated with the work they had to do to implement the projects) by gathering information about the length of administrators' and teachers' contracts from the districts and dividing their compensation by the amount of time they were contracted to work.⁴⁴

In Chapter 2, I explained that cost analyses need to account for issues associated with time. I faced time-related issues in the construction of the raw cost templates given the fact that many of the resources were used across a period of multiple years; therefore, I needed to annualize these multi-year costs. For tangible resources that have a life of more than one year (for instance, computers and laptops), I annualized the cost by multiplying the price of

⁴¹ I relied on the local newspaper story for some of these prices in one of the sites. This newspaper story provided the amount that the school district paid to a vendor for an electronic data management system and online professional development modules.

⁴² I obtained information about the price for computers and laptops from Lenovo (www.lenovo.com), for Microsoft Office software through Microsoft (www.office.microsoft.com), for tablets from Apple (www.apple.com), projectors and document cameras from Epson (www.epson.com), and for reference books for standards-based evaluation from Amazon (www.amazon.com). I obtained assessment information from the Northwest Evaluation Association (www.nwea.org). I obtained information on each site's sales tax rates from each state's tax website. I obtained site-specific office space rental rates through LoopNet (www.loopnet.com).

⁴³ Two of the districts did not provide average compensation for assistant principals; in these cases, I obtained geographically appropriate information regarding median assistant principal compensation from Salary.com. I chose this source because it (a) provided information for assistant principals, (b) included information about benefits as well as salary, and (c) provided estimates for the cities/counties where the projects in this study are located.

⁴⁴ For some project components, students needed to devote time. I did not monetize this resource but rather left it in hours. This approach aligns with the decision of King (1994), who points out that "there is no market value for unemployable individuals. It stands to reason that the most valuable alternative use of student time involves learning rather than earning opportunities. However, the economic value of foregone learning opportunities is hard to quantify and does not necessarily lend itself to a dollar metric" (p. 8).

the item by an annualization factor of 0.23 (the factor obtained using assumptions of a five-year life for the equipment and an interest rate of five percent).⁴⁵ I also annualized the cost of intangible resources that did not recur in the short run (for instance, initial training on the standards-based evaluation tools, which occurred in all three study sites). While the districts did not necessarily have to invest in training each year, I chose to include an annualized cost for training because the projects would not have been able to operate had key personnel not received these trainings. Thus, even though the costs did not necessarily recur over time, they were a necessary cost, and just like equipment and supplies, deserved consideration for subsequent years of project implementation. I chose to divide the price of these initial trainings by five, in order to align with the five-year-life assumption I made for tangible resources and to reflect the fact that, in the face of employee turnover, initial training expenses would need to re-occur in the long run.

Determination of the extent to which TIF and non-TIF sources covered project costs. After I had determined the magnitude of costs associated with one year of project implementation for each site, I used budget documents and interview data to determine the extent to which TIF and non-TIF sources bore the costs associated with various resources. Despite the fact that all of the projects under study received federal grants to implement their projects, TIF dollars did not cover all of the costs associated with project implementation. Districts, the personnel within them (such as school administrators and teachers), external personnel (such as community members who served on advisory panels), and students

⁴⁵ Levin and McEwan (2001) provide the annualization formula (p. 69):

$$a(r, n) = \frac{r(1+r)^n}{(1+r)^n - 1}$$

where r = interest rate and n = lifetime of asset for depreciation.” I use an unrounded annualization value in my calculations.

This formula attempts to “[estimate] an average of the combination of depreciation and interest on the undepreciated portion [of the equipment] over the life of the [equipment]” (p. 67).

contributed fiscal and non-fiscal resources to project implementation. Together, these stakeholders constitute the “non-TIF sources” that bore some of the opportunity costs associated with implementing the incentive projects under study. Since cohort 3 TIF grant requirements specified that grantees had to assume an increasing share of payout obligations each grant year, districts were responsible for some of the opportunity costs associated with distributing payouts to incentive plan participants. In order to determine these district payout responsibilities for the year under study, I used project-generated annual performance reports to determine what percent of payouts were required to be borne by the grantee in 2012-13 and, for the most part, multiplied payout totals by each parties’ percent to determine the distribution of payout costs between the districts and the TIF grant.⁴⁶

Standardized data templates. In the previous section, I outline the steps that I took to (a) determine the whole range of resources required to implement the projects, (b) determine the site-specific prices associated with these resources, and (c) determine the extent to which TIF and non-TIF sources bore the costs associated with various resources. In this section, I only discuss one analogous step – determining standardized prices associated with various resources – because in order to standardize prices, I did not need to alter the list of resources required to implement the project, nor did I need to alter the determination of which source (TIF or non-TIF) bore the costs of implementation for various resources. I discuss the steps I took to determine standardized prices in the following paragraphs.

As I note in Chapter 2, prices for goods and services vary across geographic locations. Thus, in order to understand cost differences across projects in different locations, it is necessary to separate policy-relevant differences in project implementation cost from

⁴⁶ The JR project includes payouts for some personnel who are not covered by the TIF grant language (e.g., district administrators, transportation and maintenance personnel, and other district employees). For these payouts, I allocated the entire cost of the payouts to the district.

differences in cost that are driven by geography (which is outside of the control of local policymakers; Taylor & Fowler, 2006). In order to ensure that the costs I present were comparable across projects and potentially useful to policymakers at other sites, I substituted uniform prices for project-specific prices to create standardized data templates (Appendix E). For the standardized data templates, I kept the types and amounts of resources from the raw data templates but inserted new prices for most of the resources, such as personnel (at both the district and the school levels), facilities (project office space), and materials (such as electronics).⁴⁷ Table 5 provides an overview of these standardized prices.

⁴⁷ While there were very few prices that I did not standardize, some did exist. Prices that I kept the same on the raw and standardized cost templates included payouts (which I retrieved from district-provided data), the price of the data management systems (which I retrieved from budgets/APRs), contracts with professional development providers and other external consultants (which I retrieved from budgets/APRs), site-specific materials (such as the Teacher Toolkit for the TAP project, which I retrieved from a budget/APR), and allocations for substitute teachers (due to site-level variance in how the projects dealt with substitute teacher allocations for release time, which I retrieved from budgets/APRs).

Table 5. Sources for standardized price information

<i>Price Information</i>	<i>Source</i>	<i>Value</i>
U.S national average salary for public school teachers	Digest of Education Statistics Advance Release of Selected 2013 Digest Tables; National Center for Education Statistics (2014)	\$70,479
U.S. national average salary for public school assistant principals	2012 Statistical Abstract of the United States; U.S. Census Bureau (2012)	\$100,079
U.S. national average salary for public school principals	NCES Schools and Staffing Survey; Bitterman, Goldring, & Gray (2013)	\$114,782
U.S. national average salary for education administrators	May 2013 National Occupational Employment and Wage Estimates; Bureau of Labor Statistics (2013)	\$113,338
U.S. national average salary for administrators for instructional services	2012 Statistical Abstract of the United States; U.S. Census Bureau (2012)	\$133,372
U.S. national average salary for deputy/associate superintendents	2012 Statistical Abstract of the United States; U.S. Census Bureau (2012)	\$178,728
U.S. national average salary for school superintendents	2012 Statistical Abstract of the United States; U.S. Census Bureau (2012)	\$209,708
U.S. national average salary for administrative assistants	May 2013 National Occupational Employment and Wage Estimates; Bureau of Labor Statistics (2013)	\$47,813
U.S. national average asking rent for office space	Cassidy-Turley Realtors; Thorpe, Edwards & Rockey (2014)	\$22/square foot
U.S. national average sales tax	Thomson Reuters (2013)	8.451%
Desktop computer with Microsoft Office software	Lenovo (www.lenovo.com)	\$1,006
Laptop computer with Microsoft Office software	Microsoft (www.office.microsoft.com)	
Tablets	Lenovo (www.lenovo.com)	\$811
Document cameras and projectors	Microsoft (www.office.microsoft.com)	
Reference books for educator evaluation	Apple (www.apple.com)	\$640
	Epson (www.epson.com)	\$426
	Amazon (www.amazon.com)	\$67, \$31

Note: I present dollar values in this table rounded to the nearest whole number, but I used unrounded values in my calculations. In this table, compensation includes salary (from the relevant source) and benefits (which I calculated as 25 percent of salary). Different projects relied on different types of district administrative staff to engage in project administration and evaluation of school leaders. I used the salary for “education administrators” for those district administrators who managed the incentive projects. I used the salary for “administrators for instructional services” for the TAP project, where district-level administrator supervisors evaluated principals. I used the salary for “deputy/associate superintendents” for the non-JR project, where an associate superintendent performed principal evaluations. I used the salary for “school superintendents” for the JR project, where the district superintendent performed principal evaluations.

In Chapter 2, I note that, since inflation affects the price of goods and services, researchers should take care to adjust for inflation when they gather price information from different years (Fowler & Monk, 2001). Given this consideration, when necessary, I used the Consumer Price Index to convert prices to 2013 dollars. For instance, as shown on table 5, many of the data sources that provided salary information were published before 2013; in these cases, I converted prices forward to 2013 dollars. Additionally, because I looked up prices for materials (e.g., electronics, reference books) from online vendors in 2014, I converted those prices back to 2013 dollars.

Like the raw data templates, the standardized data templates include hourly personnel costs. I calculated standardized hourly personnel costs for district administrators, school administrators, and teachers. Table 6 presents a list of sources I used to gather information for hourly wage calculations.

Table 6. Sources for calculations of hourly personnel costs

<i>Time Information</i>	<i>Source</i>
Number of hours in a full-time work year	Office of Personnel Management (n.d.)
Average number of days in administrators' contracts	National Center for Education Statistics (n.d.), Schools and Staffing Survey (2011-12) web tables
Average number of days in teachers' contracts	Allegretto, Corcoran, & Mishel (2004); Rice & Brent (2002)

In order to calculate hourly wages, I divided the compensation information outlined in table 5, which includes salary and benefits,⁴⁸ by the estimated number of hours in the employees' contracts. I assumed that district administrators worked year-round; accordingly, I divided their compensation by 2,087 (the number of hours used by the Office of Personnel Management for calculating hourly rates of pay). The most recent administration of the

⁴⁸ In order to obtain a total compensation (salary plus benefits) amount for personnel costs, I assume that benefits are 25% of salary. See Rice and Brent (2002) for precedent.

NCES Schools and Staffing Survey (SASS) reports that school administrators' contracts average 230 days (National Center for Education Statistics, 2014). I used the NCES contract information and assumed that school administrators worked for eight hours each day to arrive at an estimated 1,840 hours per year for school administrators, and I computed school administrators' hourly wage by dividing their compensation by 1,840. In order to compute an hourly wage for teachers, I relied on an estimated number of teacher contract days from Allegretto, Corcoran, and Mishel (2004) and Rice and Brent (2002), who use 190 as the length of teachers' contracts. I use this teacher contract length information and assume that teachers worked for eight hours each day to arrive at an estimated 1,520 hours per year for teachers. I computed an hourly wage for teachers by dividing teachers' compensation by 1,520.⁴⁹ Table 7 presents the hourly personnel prices I used in this dissertation.

Table 7. Hourly personnel costs

<i>Personnel</i>	<i>Hourly price</i>
Teacher	\$46
Assistant principal	\$54
Principal	\$62
Education administrator, elementary and secondary schools	\$54
Administrators for instructional services	\$64
Deputy/associate superintendent	\$86
Superintendent	\$100

Note: I present dollar values in this table rounded to the nearest whole number, but I used unrounded values in my calculations.

As I noted in the introductory paragraph to this section, the process of standardizing prices for the standardized cost templates did not affect my determination of which source (TIF or non-TIF) bore the costs associated with various resources. Because I used Excel to construct my cost templates, when I adjusted the site-specific prices to the standardized

⁴⁹ This is only one of many approaches to the computation of an hourly rate for teachers and does not necessarily match approaches to compute hourly rate for other workers with different work, contract, and/or compensation structures. Thus, the hourly rate of teachers that I use in this dissertation should not be used in cross-profession wage comparisons. For a discussion regarding the challenges of comparing teachers' compensation to the compensation of other professionals, please see Allegretto, Corcoran, and Mishel (2004).

prices, the formulas I used in the spreadsheet automatically updated the information regarding the costs borne by TIF and non-TIF sources.

Human Costs

The focus of the individual and focus group interviews that I conducted was on the resources required to implement the educator incentive plans in each of the sites. Given that focus, conversations often highlighted issues associated with participants' investment of time and effort in project implementation. Also, given that focus, conversations did not often deal with participants' reactions to other aspects of educator incentive plans (such as their reaction to the appropriateness of linking compensation to performance or a number of other issues that other studies of educator incentive plans have highlighted as common areas of concern; see Malen et al. 2009; 2011). Accordingly, in this dissertation, while I acknowledge that other aspects of educator incentive plans may be associated with human costs, I focus solely on the human costs of investing time and effort in the projects.

To analyze data regarding the human costs of investing time and other resources into these educator incentive plans, I used a multi-stage, dual-direction (deductive and inductive) coding process to analyze interview and focus group data. The deductive stage of my analysis included two steps, both of which relied upon the human cost framework outlined in Rice and Malen (2003). I first analyzed each interview log and identified all data that related to any burden associated with project implementation. After I had collected these references to project-related burdens, I began to categorize the data into Rice and Malen's (2003) three human cost categories. When participants discussed challenges that they faced due to their investment of time and effort into project implementation, I categorized the data as reflective

of task costs.⁵⁰ When participants discussed burdens that dealt with interpersonal relationships (e.g., negative impacts of the projects on their relationships with colleagues), I categorized the data as reflective of social costs. When participants discussed burdens that dealt with internal feelings (e.g., guilt) associated with project implementation, I categorized the data as reflective of psychological costs.

As I attempted to separate the human cost data into the three categories outlined by Rice and Malen (2003), I determined that some data might not fit neatly into any of the categories or might display multiple characteristics (e.g., they may have had related to time and effort required to implement the projects – a characteristic of task costs – and to their own feelings – a characteristic of psychological costs). Accordingly, I began an inductive coding process, wherein I searched for themes in the data that would help me identify the types of human costs that existed in my dataset. I looked for themes that aligned with the categories by Rice and Malen (2003) and I also looked for new themes. Once I had gathered participants' sentiments into clusters of human cost themes, I arrayed the data in narrative form and selected quotations that most clearly reflected each theme to use in the report of findings.

Limitations Associated with Data and Methods

Four key limitations accompany the data and methods that I used in this study. First, my interview and focus group data come from a purposeful sample of project participants. While these participants are knowledgeable about the projects and their implementation, they may differ from other participants, and their experiences regarding resource use and human costs may also differ. The experiences of the study participants, though, are valuable insofar

⁵⁰ Note here that the important idea is to highlight *challenges associated with* investing time and effort in project implementation. These challenges are distinct from the time itself, which I account for in my analysis of the resources required to implement the incentive projects.

as they paint a picture of the resources required to implement the projects in good faith and with fidelity.

Second, lack of access to key individuals across study sites precluded me from analyzing the costs associated with project planning and evaluation. Opportunity costs accompany these activities, but because I was unable to gather information about them, I do not uncover those opportunity costs in this study. Thus, this dissertation provides a comprehensive account of the costs associated with the implementation of the projects, but it does not provide an account of the costs associated with the whole projects.

Third, this dissertation presents findings regarding the extent to which the districts used TIF and non-TIF sources to cover implementation costs rather than findings regarding the distribution of costs across all relevant stakeholders. I do not provide a breakdown of non-TIF stakeholders due to data limitations regarding the extent to which district salaries covered project work and the extent to which employees performed project work during uncompensated time. Despite this limitation, the study provides insight into the extent to which districts used TIF grant money to cover project costs in 2012-13, which has implications for the sustainability of projects in later grant years (when the districts needed to pick up an increasing share of the incentive payments) and when the grant expires.

Finally, this dissertation's human cost findings only examine the burdens associated with investing time and energy into project implementation. Investing energy into project implementation is only one facet of project implementation that might bring about human costs; other issues, such as the process of tying student achievement to compensation, might also be associated with human costs. Limited time for interviews and focus groups

necessitated targeted conversations, but it is important to note that other human costs might exist beyond those that I raise in this study.

Summary

The preceding sections provide details regarding how I approached site selection, data collection, and data analysis for this dissertation. The purpose of each of these activities was to allow me to understand the full range of resources required to implement different types of educator incentive projects, the opportunity costs associated with those resources, the extent to which TIF and non-TIF sources bore the costs, and whether or not the implementation of educator incentive projects in this study was associated with the presence of human costs. The next chapter presents findings related to each of these topics.

CHAPTER 4: FINDINGS

This chapter presents the major findings in this study in four sections. The chapter begins with a discussion of the projects' structures and the resources required for implementation. The second part of the chapter presents findings regarding how much it cost to implement the projects for one year; in this section, I describe the projects' overall implementation costs and the costs of implementing each of the projects' components. In order to discuss the costs of projects in different locations, I use estimates from the standardized rather than raw (geographically distinct) data templates, and, in most cases, I report per-participant costs to control for the size of the projects. The third part of the chapter presents findings regarding the extent to which TIF and non-TIF sources covered the projects' one-year implementation costs. Again, I present results for the projects overall and by component. The final section of the chapter presents findings about the human costs associated with investing time and effort in project implementation. To preserve the confidentiality of study participants, I pool responses from all three sites and present a comprehensive rather than project-specific picture of the human costs of implementing educator incentives.

Description of Project Resources

The projects in this study are complex reforms that contain multiple components whose implementation requires a variety of resources. Table 8 provides an overview of the resources required for each of the three projects in this study. More detailed information regarding these resources is located in the standardized data templates in Appendix E.

Table 8. Key resources associated with implementing the educator incentive projects: 2012-13

	<i>TAP Project</i>	<i>JR Project</i>	<i>Non-JR Project</i>
<i>Project administration</i>			
Personnel	<ul style="list-style-type: none"> • Two full-time district administrators and one part-time district administrator • Part-time clerical support • Two people from external program developer who provide support for project implementation • Advisory council comprised of representatives from the district and external program developer 	<ul style="list-style-type: none"> • One full-time district administrator • Part-time clerical assistance • Part-time (summer) administrative assistance • Advisory council comprised of community leaders 	<ul style="list-style-type: none"> • One full-time district administrator • Planning teams comprised of district officials, a representative from the teacher association, and building administrators
Facilities	Office space for four district employees (administrators and clerical support)	Office space for two district employees (administrator and clerical support)	Office space for district employee
Materials, equipment, and supplies	<ul style="list-style-type: none"> • Data management system • Office supplies • Computers, laptops, and tablets for district administrators 	<ul style="list-style-type: none"> • Data management system • Office supplies • Computer and laptop for district administrator 	<ul style="list-style-type: none"> • Data management system • Office supplies • Computer, laptop, and tablet for district administrator
Travel and transportation	<ul style="list-style-type: none"> • Travel to TIF meetings • Travel to school sites for implementation assistance • Travel to TAP sites in other districts (district and school personnel) 	<ul style="list-style-type: none"> • Travel to TIF meetings • Travel to school sites for implementation assistance • Travel to job fairs for recruitment efforts 	<ul style="list-style-type: none"> • Travel to TIF meetings • Travel to school sites for implementation assistance
<i>Demonstrated performance component</i>			
Personnel	<ul style="list-style-type: none"> • District administrators (evaluate school administrators) • School administrators (attend evaluation training, spend time on 	<ul style="list-style-type: none"> • District superintendent (evaluate school administrators) • <i>Framework for Teaching</i> trainers • Vanderbilt Assessment of 	<ul style="list-style-type: none"> • District associate superintendent (evaluate school administrators) • <i>Framework for Teaching</i> trainers • School administrators (attend

	<p>own evaluations, perform standards-based evaluations)</p> <ul style="list-style-type: none"> • Teachers (fill out surveys for administrator evaluations, spend time on own formal evaluations – 4 formal evaluations per year) 	<p>Leadership in Education (VAL-ED) trainer</p> <ul style="list-style-type: none"> • School administrators (attend evaluation training, spend time on own portfolios and evaluations, perform standards-based evaluations, plan school culture activities) • Teachers (plan school culture activities, fill out surveys for administrator evaluations, spend time on own portfolio and formal evaluations – 2 formal evaluations per year) • External consultant (review administrator and teacher portfolios) • Students (fill out school climate surveys) 	<p>evaluation training, spend time on own portfolios and evaluations, perform standards-based evaluations)</p> <ul style="list-style-type: none"> • Teachers (conduct peer observations, spend time on own portfolios and formal and informal evaluations – 2 formal and 5 informal evaluations per year) • Students (take additional assessment)
Materials, equipment, and supplies	<ul style="list-style-type: none"> • Teacher evaluation manuals • Tablets (for school administrators and master/mentor teachers, who perform teacher evaluations) • TAP observer applications for tablets 	<ul style="list-style-type: none"> • Portfolio supplies (sheet protectors, ink, paper, binders) • Reference books on the <i>Framework for Teaching</i> • VAL-ED surveys • Miscellaneous materials for school culture/celebratory activities 	<ul style="list-style-type: none"> • Reference books on the <i>Framework for Teaching</i> • Tablets (for administrators and teachers) • Portfolio supplies (sheet protectors, ink, paper, binders) • Contract with testing company for additional assessment
Other inputs	Payouts for demonstrated performance	Payouts for demonstrated performance	Payouts for demonstrated performance
<i>Investments in or extensions of practice</i>			
Personnel	<ul style="list-style-type: none"> • School administrators (attend 	<ul style="list-style-type: none"> • Site team leaders and members 	Substitute teachers (attend initial

	initial and ongoing training for project implementation, coordinate professional development [PD] efforts for year, attend TAP Leadership Team [TLT] meetings) <ul style="list-style-type: none"> • Teachers (weekly PD “cluster” meetings) • Substitute teachers (provide coverage for certain teachers to attend weekly PD meetings) 	(assist with program planning and recordkeeping) <ul style="list-style-type: none"> • Substitute teachers (provide coverage for teachers who need release time for PD or other project activities) 	training to be able to work in project schools; provide coverage for teachers who need release time for PD or other project activities)
Materials, equipment, and supplies	<ul style="list-style-type: none"> • TAP PD portal • TAP training materials for TLTs 	<ul style="list-style-type: none"> • Contracts with Teachscape, Mindsteps, Simple K-12, Educational Impact, and other PD providers • Laptops, tablets, document cameras, and projectors for master teachers 	Contracts with Teachscape and Coalition of Essential Schools for PD
Travel and transportation	Travel expenses for TLTs to attend TAP Summer Institute and TAP National Conference	Travel expenses for master teachers and peer coaches to attend professional conferences	Travel expenses for administrators and teachers to attend professional conferences
Other inputs	Payouts for master and mentor teachers	<ul style="list-style-type: none"> • Payouts for master teachers and peer coaches • Payouts for attendance, PD, leadership, teacher-led PD, and curriculum projects 	<ul style="list-style-type: none"> • Payouts for PD • Payouts for teachers on planning team

Educator supply and distribution component

Other inputs	Retention bonus	N/A	Retention bonus
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Note: Resources are based on implementation during the 2012-13 school year. While the JR project documents did discuss a signing bonus and technology stipend, all new teachers, regardless of their choice to participate in the JR project, would receive these bonuses. Both the JR project and the non-JR project have planning councils that include teacher representation; teacher investment in these planning councils is listed under the “investments in or extensions of practice” resource category, since serving on these bodies is a leadership opportunity for teachers.

In the 2012-13 school year, all three educator incentive projects included in this study needed to allocate resources to project administration, and all three included a demonstrated performance component and investments in or extensions of practice. Two of the projects (the TAP and non-JR projects) awarded retention bonuses to qualifying project participants. While the JR project documents discussed a signing bonus and technology stipend for teachers who were new to the district, recipients of these bonuses would not need to participate in the JR project to receive them. Therefore, I do not include these recruitment bonuses in the costs of JR project implementation.

While the three projects' structures were similar, their approaches to each of the project components differed. Project administration, for instance, was handled by a different number of staff in each site, which impacted personnel costs and also material and travel costs, since the addition of personnel required additional computers and additional funds for travel, particularly travel to school sites to provide implementation assistance.⁵¹ While all three projects used data management systems to manage project information, each of the projects used a different type of software.

While all projects based demonstrated performance calculations on standards-based evaluations and student performance, they did not use the same evaluation approaches; some of these differences impacted resource requirements. For instance, the administrator evaluation for the TAP project required the time of district administrators who were principal supervisors, whereas the administrator evaluations for the JR project and non-JR project required a district superintendent and district associate superintendent, respectively. The number of teacher evaluations per year varied across sites – four formal evaluations per year

⁵¹ The addition of administrators did not impact travel for TIF meetings, since more than one person went to TIF meetings across sites. That is, district administrators who were not necessarily responsible for the incentive projects sometimes attended TIF meetings.

for teachers in the TAP project, two formal evaluations per year for teachers in the JR project, and two formal plus five informal (comprised of external, peer, and self) evaluations per year for teachers in the non-JR project. This variation impacted the amount of time that administrators and teachers spent on evaluation activities. The JR project and the non-JR project educator evaluations required portfolios; the TAP project did not. Furthermore, while the TAP and JR projects' student performance component used data only from the existing state achievement tests, the non-JR project's student performance component used data from the existing state achievement test and an additional student assessment that the district purchased.

Similarly, the three projects invested in and extended practice in many different ways. For instance, the TAP project involved master and mentor teachers who led required weekly professional development meetings (called "cluster" meetings) for career teachers in their buildings. The JR project employed master teachers and peer coaches who were available to assist other teachers with professional development, but participating teachers were able to choose their own professional development from an array of choices, some of which were accessible through online vendors. The non-JR project did not include master or mentor teachers. Like the JR project, it allowed for a wide variety of professional development opportunities for participating teachers.

The projects' varied choices regarding how to approach project administration, demonstrated performance, investments in or extensions of practice, and educator distribution components affected project costs. In the following sections, I provide additional information about the costs associated with implementing each of the projects for one year.

Magnitude of Project Costs

In this section, I provide estimates of the opportunity costs associated with implementing each of the three projects for the 2012-13 school year. First, I discuss the costs associated with the whole projects, and then I discuss the costs associated with each project component (project administration, demonstrated performance, investments in or extensions of practice, and educator distribution).⁵²

Overall Costs

Estimated annual operating costs for the projects in this study ranged from a low estimate of just under \$1.6 million in the JR project to a high estimate of over \$6 million in the TAP project (table 9). When adjusted for the number of participants, the JR project remained the lowest-cost project of the three (\$4,246 per participant), but the non-JR project outranked the TAP project as the highest-cost project (\$13,307 per participant in the non-JR project; \$8,077 per participant in the TAP project).

Table 9. Project costs and fiscal outlays, overall and per participant: 2012-13

	<i>TAP Project</i>	<i>JR Project</i>	<i>Non-JR Project</i>
	<i>n = 747</i>	<i>n = 371</i>	<i>n = 155</i>
Costs			
<i>Total costs</i>	\$6,033,547	\$1,575,359	\$2,062,543
<i>Cost per participant</i>	\$8,077	\$4,246	\$13,307
Fiscal outlays			
<i>Total expenditures</i>	\$3,696,551	\$1,063,173	\$1,765,302
<i>Expenditures per participant</i>	\$4,949	\$2,866	\$11,389

Note: For more information regarding which resources were associated with an expenditure, see the text below; see the decision rule document in Appendix D and the standardized data templates in Appendix E for additional details.

⁵² Throughout the dissertation, I have referred to “educator supply and distribution.” Both of the projects that had payments in this category used retention bonuses, which are more explicitly tied to the goal of improving educator distribution than they are to the goal of improving the supply of educators. Consequently, in order to make the figures easier to read, in this chapter, I simply refer to “educator distribution.”

Table 9 indicates that not all costs associated with the projects' implementation translated into fiscal outlays. Expenditures did not include the time that school administrators and teachers spent on project-related activities that were not associated with an explicit payout (i.e., time that administrators and teachers spent performing standards-based evaluation and, for administrators in all three sites and administrators and teachers in the TAP project who did not receive payouts for professional development, time on professional development).⁵³ This time was either covered by educators' salaries (when it took place during contract hours) or was uncompensated (when it took place outside of contract hours). In either case, it represented a cost but not a new expenditure. When it was covered by salary, it was not a new expenditure (since the district would pay the salary anyway), but it represented an opportunity cost to the district due to the fact that the educators were spending time on the incentive project rather than other district goals. When it was uncompensated time, it represented a cost to the educators themselves, who could not use that time for other activities.

Although not all costs were associated with new fiscal outlay, a number of project costs did translate into expenditures. The projects required a variety of fiscal outlays, including project administration personnel (district administrators, clerical assistants, and in the case of TAP, assistance from TAP personnel); materials and supplies for project administration (including data management software), evaluations, and professional development; a variety of travel activities (to TIF meetings, for professional development, to school sites for implementation assistance, for recruitment); contracts with professional

⁵³ Participants' time is the main example of a resource that is associated with a cost but not an expenditure, but it is not the only resource. For instance, across all three projects, the office space used for project administration is associated with cost but not expense. To view all resources associated with project costs/expenses, see the data templates in Appendix E.

development and other consultants; substitute teachers; a student assessment (for the non-JR project, which used an additional assessment besides the state test administered to all students); and payouts. The expenditure pattern was similar to the cost pattern; both total and per-participant expenditures were lowest for the JR project, whereas total expenditures were highest for the TAP project and per-participant expenditures were highest for the non-JR project.

As one might expect, major drivers of project costs were the incentive payouts associated with the projects. The three projects in this study provided different types and sizes of payouts to participants, which led to differences in per participant payout amounts across the projects (table 10).

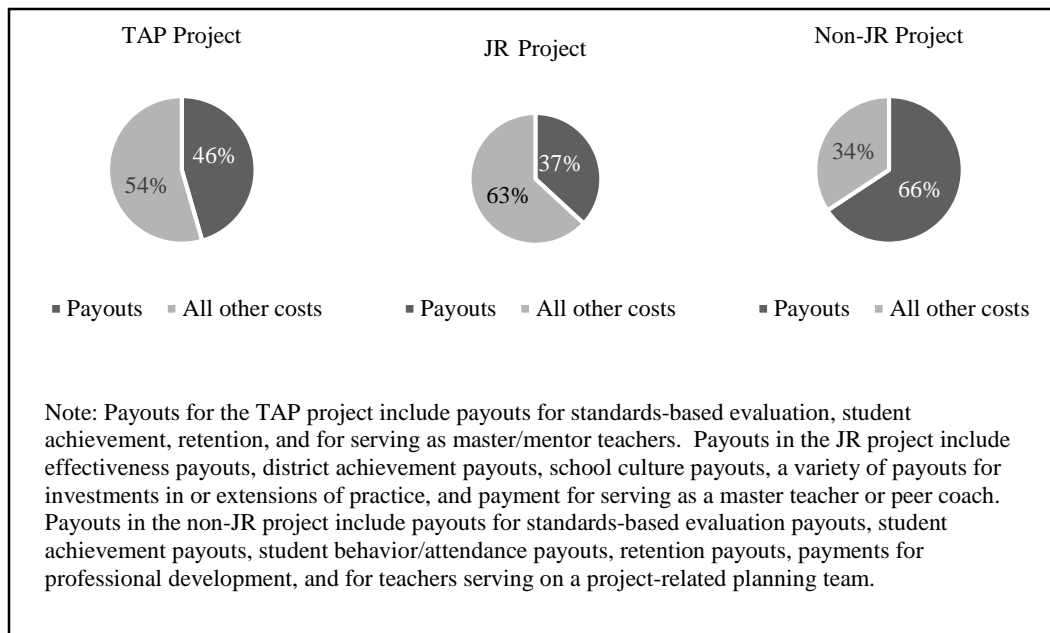
Table 10. Project payouts, overall and per participant: 2012-13

	<i>TAP Project</i>	<i>JR Project</i>	<i>Non-JR Project</i>
Total payouts	\$2,747,403	\$580,931	\$1,355,192
Average payout per participant	\$3,678	\$1,566	\$8,743

Note: Per participant estimates use the following participant numbers: 747 participants in the TAP project, 371 participants in the JR project, and 155 participants in the non-JR project.

Similarly, payouts as a proportion of overall (non-participant-adjusted) implementation costs varied across projects. In 2012-13, 46 percent of one-year operating costs went to payouts in the TAP project; 37 percent of one-year operating costs went to payouts in the JR project; and 66 percent of one-year operating costs went to payouts in the non-JR project (figure 2).

Figure 2. Payouts as a proportion of overall project cost: 2012-13



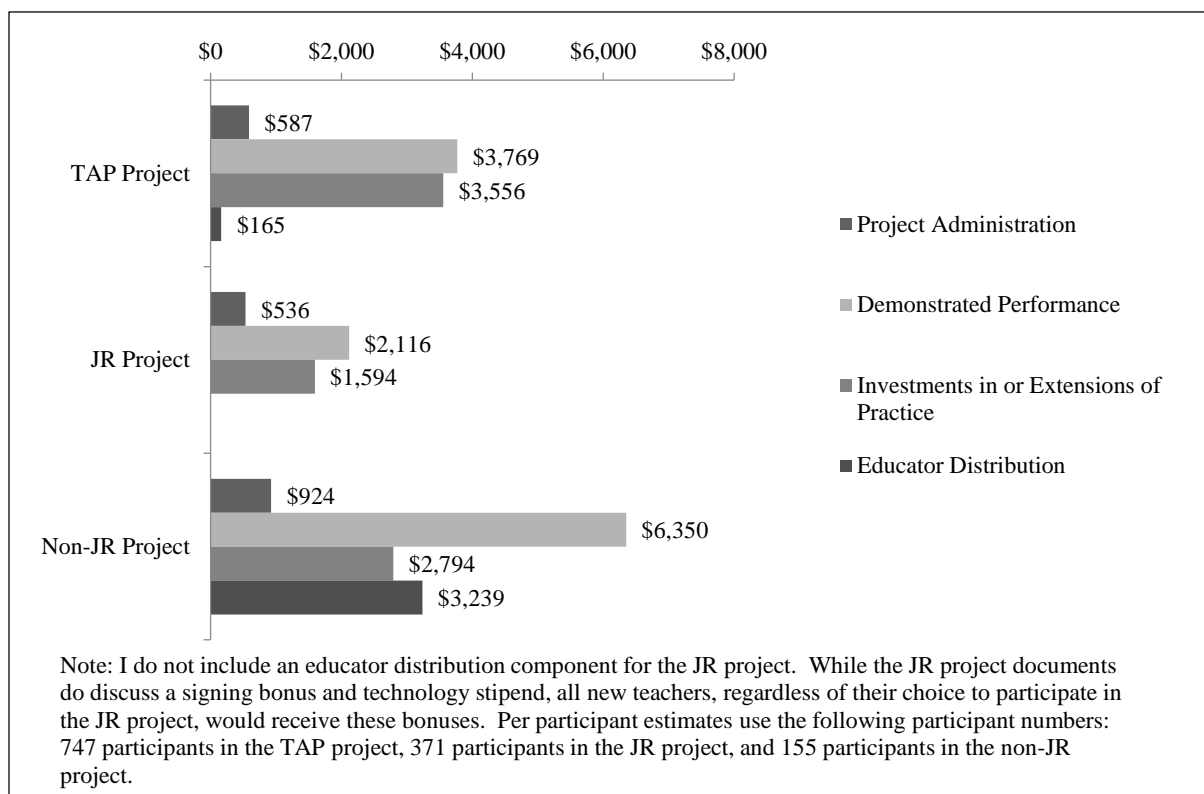
Detailed Costs by Component

As I mention above, the projects in this study took varied approaches to their multiple components (administration, demonstrated performance, investments in and extensions of practice, and educator distribution). The TAP project was administered by personnel from both the district and NIET. It had a demonstrated performance component that relied on student achievement and standards-based evaluation with multiple observations; a job redesign (master/mentor teacher) component;⁵⁴ and large but selective retention bonuses. The JR project was administered only by district personnel. It had a demonstrated performance component that included standards-based evaluation, student achievement, and other student outcomes; both job redesign (master teacher and peer coaches) and job

⁵⁴ Due to the fact that master and mentor teachers in the TAP project performed formal observations as part of the standards-based evaluations of teachers in their buildings, some costs that might otherwise have accrued to the demonstrated performance component were actually in the investments in or extensions of practice component for this district.

expansion opportunities; and no recruitment or retention bonus.⁵⁵ The non-JR project was administered only by district personnel. It included a demonstrated performance component that included student achievement, other student outcomes, and standards-based evaluations with multiple formal and informal observations; job expansion opportunities; and large and widely accessible retention bonuses. Figure 3 shows per-participant project costs for each of these project components including (where applicable) costs associated with payouts.

Figure 3. Per-participant project costs, by component: 2012-13



The most costly component across all three projects was the demonstrated performance component, which reached a high of \$6,350 per participant in the non-JR project. While the second most costly component in the TAP and JR projects was investments in or extensions of practice (\$3,556 and \$1,594, respectively), the second most

⁵⁵ While the JR project documents did discuss a signing bonus and technology stipend, all new teachers, regardless of their choice to participate in the JR project, would receive these bonuses.

costly component in the non-JR project was the educator distribution component (\$3,239). For the JR⁵⁶ and non-JR projects, the least costly component was project administration (\$536 and \$924, respectively), whereas the least costly component for the TAP project was the educator distribution component (\$165). Variation in the types of resources required for different parts of project implementation drove variation in costs across project components and across projects for each component. In the next sections, I describe in more detail the resource categories that drove costs for project administration, demonstrated performance, investments in or extensions of practice, and educator distribution components.

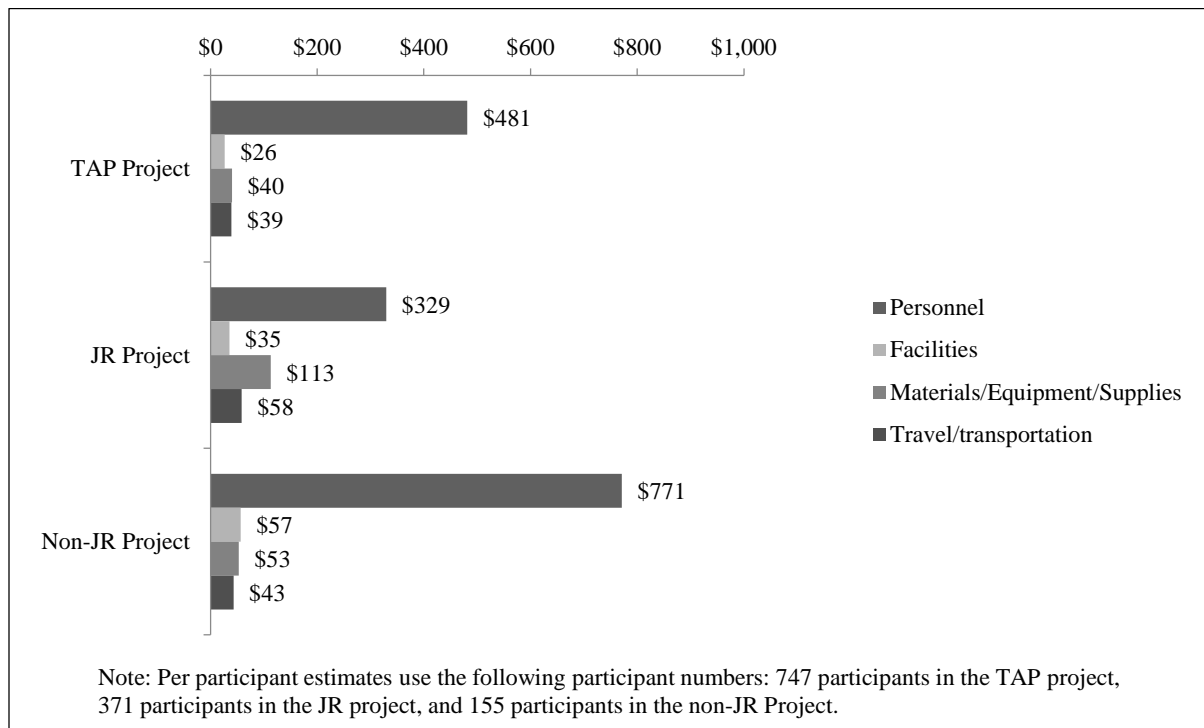
Project administration. In each model, project administration included resources such as district (and, in the case of the TAP project, external) administrators, materials such as data management systems, and travel to TIF meetings.⁵⁷ Personnel costs drove the cost of project administration in all three districts (figure 4). In fact, in all three sites, the per-participant cost of project administration personnel was higher than the per-participant costs of all other project administration resources (facilities, materials, and travel) combined. Participant-adjusted personnel costs were highest in the non-JR Project, which had the fewest participants. Per-participant personnel costs in the TAP project and the JR project were both under \$500; the TAP project had higher total costs due to the presence of multiple district and external administrators involved in project implementation, but the JR and non-JR projects had fewer participants over which to distribute administrative costs. Costs associated with materials, equipment, and supplies were proportionally high for the JR

⁵⁶ Technically, the least costly component for the JR project was the educator distribution component, since it had a per-participant cost of \$0. Accordingly, for the JR project, the project administration component was the least costly component that had a cost higher than zero.

⁵⁷ Study participants explained that requirements to travel for TIF meetings had declined across the life of the grant as the Department of Education moved away from in-person meetings to virtual meetings. Still, during the 2012-13 school year, some travel was necessary. In this study, I assume that participants from each district had to travel to two TIF meetings.

project due to the fact that the JR project's data management system was more costly than the corresponding systems in the TAP project and the non-JR project.

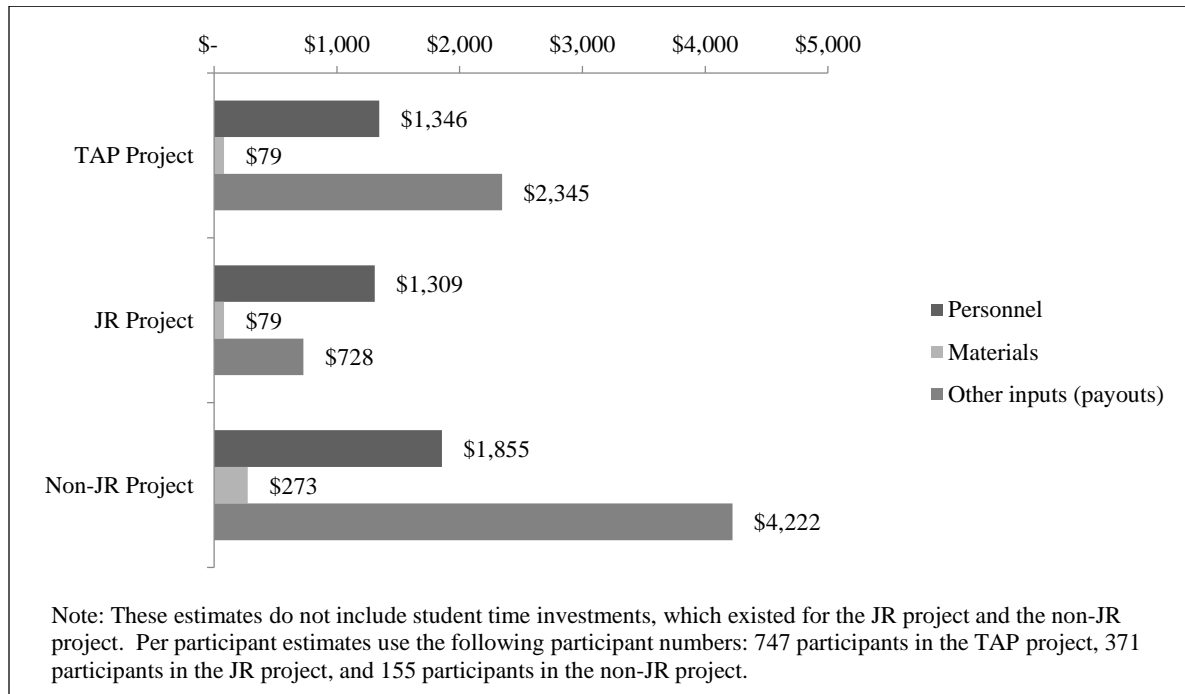
Figure 4. Per-participant costs of project administration, by resource category: 2012-13



Demonstrated performance. The projects' demonstrated performance component provided payouts to building administrators and teachers for their performance on standards-based evaluations, for their students' performance on standardized achievement tests, and, in the JR and non-JR projects, for other desired student outcomes such as improved behavior, increased attendance, or improved perceptions of school climate. In the TAP project and the non-JR project, the highest per-participant costs were associated with educators' performance payouts (\$2,345 and \$4,222, respectively; figure 5). In the JR project, however, the highest category of per-participant costs was associated with personnel (\$1,309), and while personnel costs did not outpace payout costs in the TAP and non-JR projects, they were still substantial (\$1,346 and \$1,855, respectively). Because master and mentor teachers in the TAP project

performed formal observations as part of teachers' standards-based evaluations, some costs that might otherwise show up in the demonstrated performance component were shifted to the investments in or extensions of practice component.

Figure 5. Per-participant costs of demonstrated performance, by resource category: 2012-13



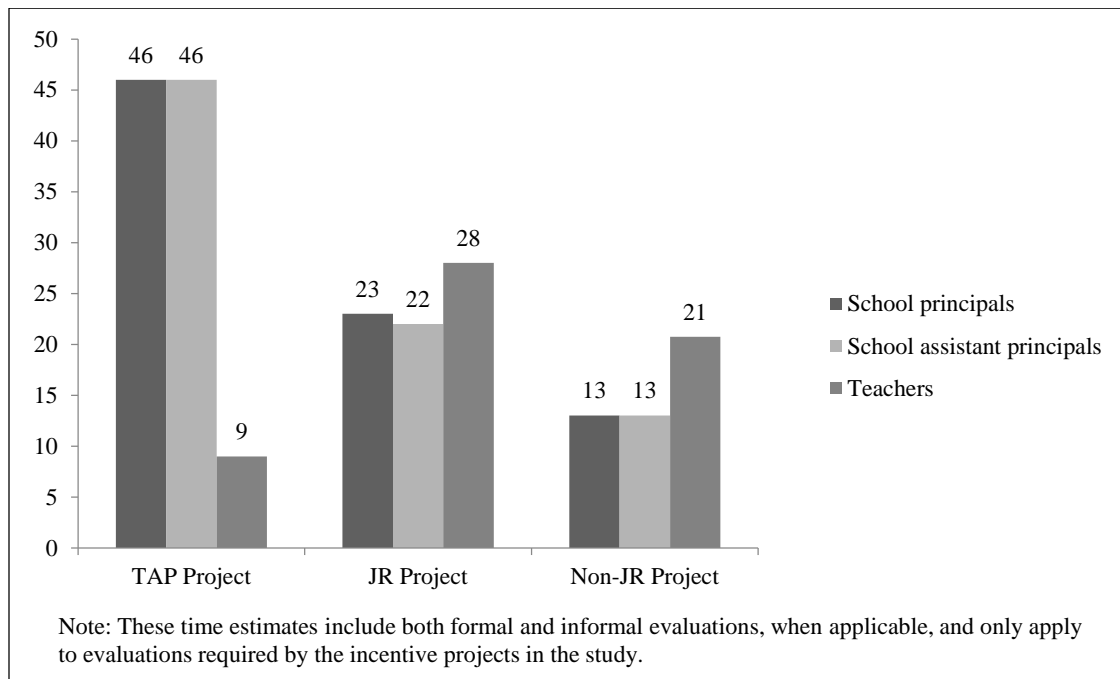
Though some of the personnel costs displayed in figure 5 were associated with expenditures (for instance, in the JR and non-JR projects, some of these costs were associated with initial training on the *Framework for Teaching* carried out by consultants from the Danielson Group), most of these personnel costs were associated with school administrators and teachers performing work associated with the complex evaluation systems.⁵⁸ The largest drivers of demonstrated performance personnel costs were the costs associated with educators spending time on their own evaluations and on evaluating others.

⁵⁸ In all three projects, a small portion of demonstrated performance personnel costs were associated with district-level administrators evaluating school-level administrators' performance.

Educators (both administrators and teachers) spent substantial amounts of time on their own evaluations (figure 6). Hour estimates are highest (46 hours for each principal and assistant principal) in the TAP project, where building administrators underwent two sets of observation-based evaluations.⁵⁹ Estimates for each principal and assistant principal were over 20 hours per year in the JR project, where both principals and assistant principals underwent observation-based and portfolio-based evaluations (and where principals also spent time filling out online self-evaluations for the VAL-ED). The lowest administrator estimates, in the non-JR project, were still over 10 hours per year, where administrators underwent portfolio- and observation-based evaluations but reported lower time estimates associated with these activities. Teachers' estimates, too, illustrate a substantial investment of time. In the two districts whose projects required teachers to create portfolios of practice, each teacher spent an estimated 28 and 21 hours on his or her own evaluation (in the JR and non-JR projects, respectively). In the TAP project, where teachers did not create portfolios but underwent four formal observations per year, the time estimate per teacher was nine hours.

⁵⁹ School administrators in the TAP project underwent a standards-based evaluation that aligned with the administrator evaluation in the district, and they also underwent an evaluation of the extent to which they implemented TAP with fidelity. The majority of the hours associated with administrator evaluation in the TAP project (43 of the 46 hours) were associated with the district-aligned evaluation.

Figure 6. Average number of hours that educators spent on their own evaluations per year: 2012-13



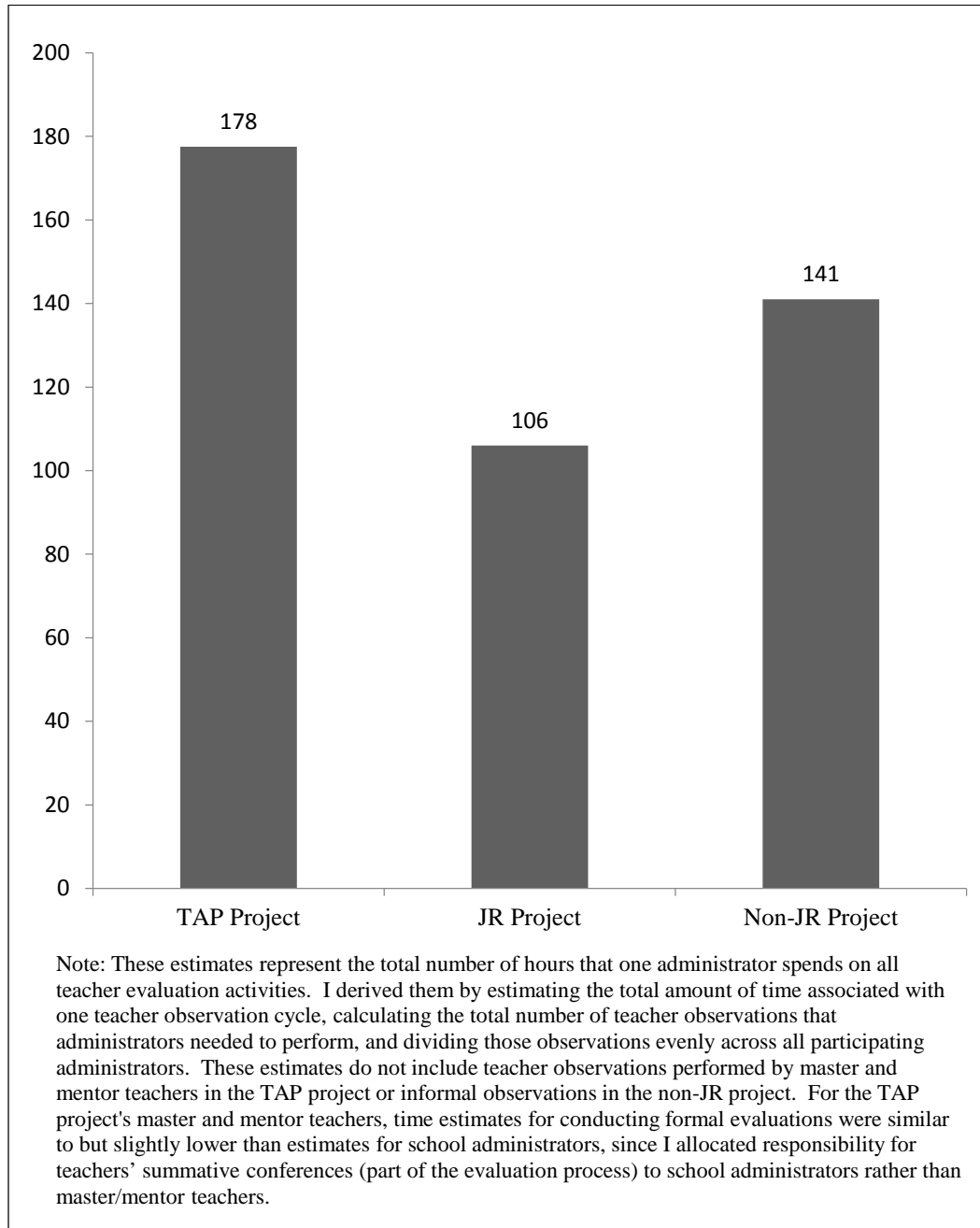
While the time estimates for educators performing work for their own evaluations were noteworthy, they were completely overshadowed by time estimates associated with building administrators (principals and assistant principals) conducting formal teacher evaluations (figure 7).⁶⁰ These estimates depend on (a) the amount of time it takes to complete a formal observation cycle, (b) the number of observation cycles embedded within each project, and (c) the number of teachers who participated in the project. In all three sites, the estimated time that each administrator spent on teacher evaluation responsibilities was over 100 hours per year. In the TAP project, each administrator spent an estimated 178 hours per year performing teacher evaluations;⁶¹ in the JR project, each administrator spent an

⁶⁰ In the TAP project, master and mentor teachers also conducted formal teacher evaluations. Time estimates for master/mentor teachers conducting formal evaluations are similar to but slightly lower than estimates for school administrators, since I allocated responsibility for teachers' summative conferences (part of the evaluation process) to school administrators rather than master/mentor teachers.

⁶¹ This estimate takes into account the fact that non-administrators (master and mentor teachers) also performed formal evaluations in TAP Project. If master and mentor teachers did not perform this work, the estimates here would have been higher.

estimated 106 hours per year; and in the non-JR project, each administrator spent an estimated 141 hours per year.

Figure 7. Average number of hours that school administrators spent on teacher evaluations per year: 2012-13



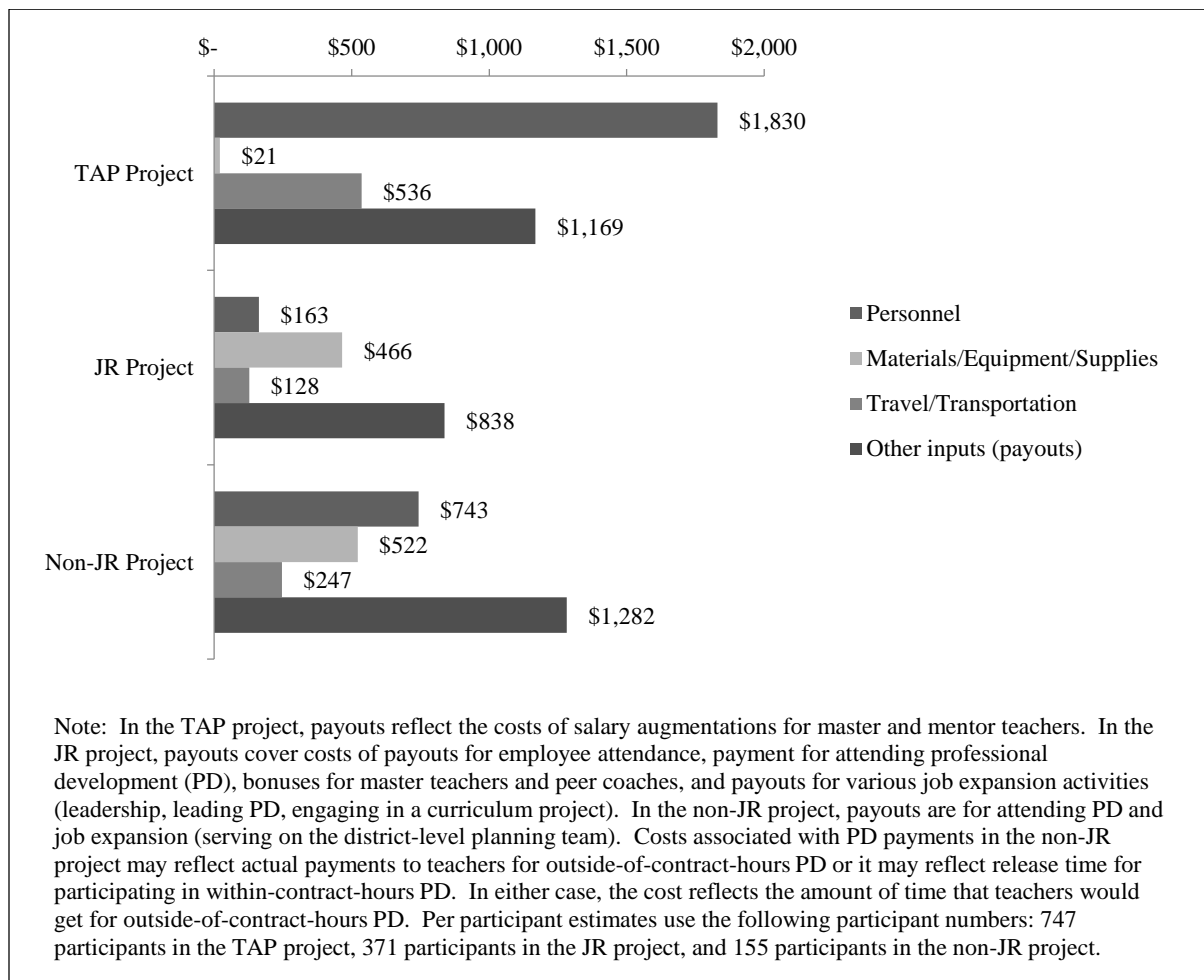
Investments in or extensions of practice. The costs for investing in or extending practice varied widely across the three projects (figure 8); this variation reflects the diverse approaches that the three sites took to this project component. Personnel costs were high in the TAP project, due mainly to educators' investment of time in professional development activities (TAP Leadership Team meetings for administrators and master/mentor teachers and weekly cluster meetings for career teachers) for which they were not compensated. While educators in the JR and non-JR projects also participated in a great deal of professional development, they received payouts for this investment. Therefore, I do not count these costs in the personnel category but rather the payout category. Still, personnel costs in the non-JR project remained considerable despite teachers' receipt of payouts for professional development due to a heavier investment in the training and employment of substitute teachers for those schools that provided teachers release time for common planning and development.

Materials costs for the JR and non-JR projects were relatively high, because these districts contracted with external professional development providers; the same was not true for the TAP project in the 2012-13 school year. However, while travel costs were relatively low in the JR and non-JR projects, travel costs were higher in the TAP project, since some professional development required that members of TAP Leadership Teams travel for training.

Payouts for investing in or extending practice were relatively high in all three sites. While payout costs for the JR project were lower than payouts in both the TAP and non-JR projects, they represented the largest investment or extension cost for that particular model, and they were driven by payments to teachers for engaging in professional development, for

serving as master teachers and peer coaches, and for participation in a variety of job expansion activities. Payouts in the TAP project were driven by salary augmentations for master and mentor teachers; payouts in the non-JR project were driven by payments to teachers for professional development (either as actual payments or as release time) and for stipends for those teachers who served on the district-level project planning committee.

Figure 8. Per-participant costs of investments in or extensions of practice, by resource category: 2012-13

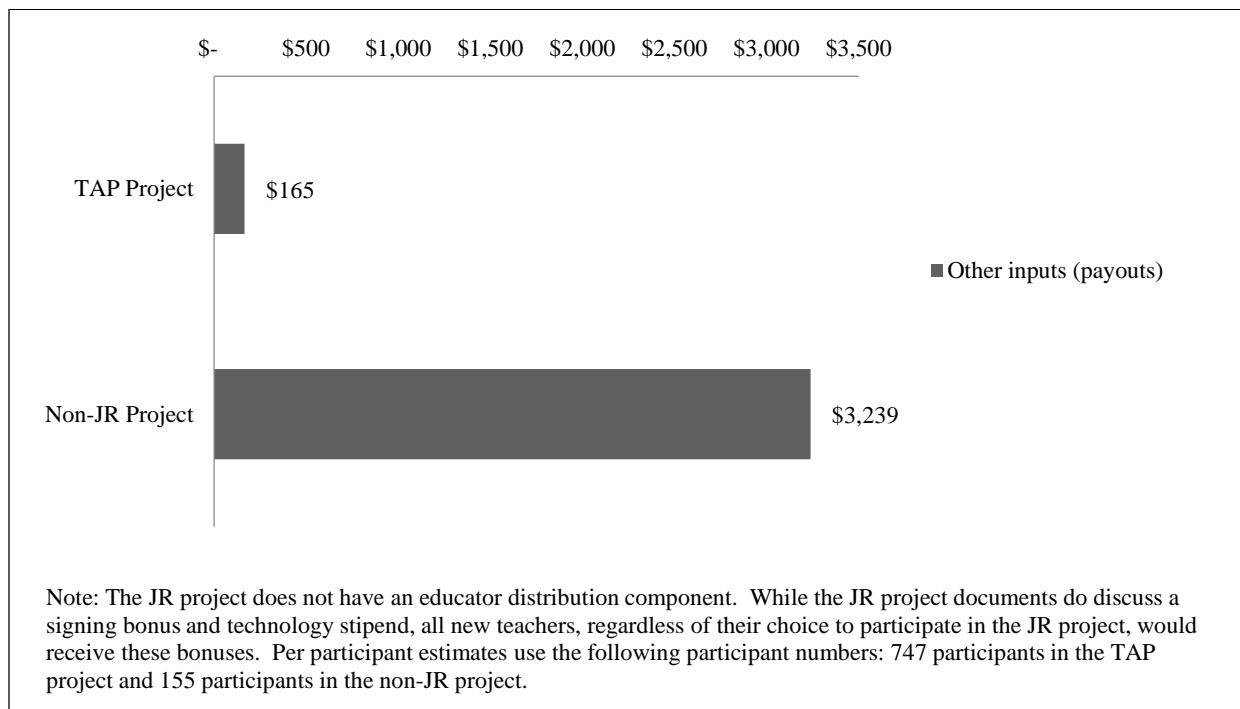


Perhaps unexpectedly, per-participant payout costs were higher in the non-JR project than they were in either the TAP project or the JR project, despite the fact that the non-JR project did not include a job redesign and both the TAP and JR projects did. Though they

were not associated with a job redesign, payouts were available to non-JR project participants for investments in or extensions of practice (in the form of payouts for professional development or stipends for serving on the district-level planning committee).

Educator distribution. The TAP and non-JR projects included retention bonuses, but eligibility for these bonuses and the size of the awards varied across the projects. In the TAP project, teachers in select TAP schools (not all TAP schools) were eligible for a \$3,000 retention bonus if they remained in the school. In the non-JR project, all participating educators (building administrators and teachers) were eligible for retention bonuses. Teachers' bonus amounts increased during each year of project participation; in 2012-13, teachers who had participated in the project for two years (which would have been the vast majority of teachers) were eligible for a \$4,000 retention bonus; teachers who had just joined the project that year were eligible for a \$2,000 bonus. Administrators in the participating schools were eligible for a \$2,000 bonus. Thus, the expansive eligibility, large bonuses, and smaller overall participant numbers in the non-JR project make the per-participant costs of retention bonuses much larger for that district than for the TAP project (figure 9).

Figure 9. Per-participant costs of educator distribution: 2012-13



Summary: Magnitude of Project Costs

The findings I report above illuminate total societal opportunity costs for the implementation of the educator incentive projects that topped \$1 million in all three sites. Total societal opportunity costs were considerably higher than expenditures due to the fact that many resources required for the projects' implementation were not associated with an explicit financial payment; still, because the districts employed those resources to implement the incentive projects, they reflect an opportunity cost, insofar as the districts could not use those same resources for other purposes.

Payouts consumed a substantial portion of annual project costs, but they did not consume more than two-thirds of the cost in any site; they consumed less than two-fifths of project costs in one site. Because the projects approached each component (project administration, demonstrated performance, investments in or extensions of practice, and educator distribution) differently, they displayed a variety of per-participant costs for each of

these components. One striking finding that was shared across all three sites, however, was that personnel costs associated with implementation of the demonstrated performance component were relatively high due, in large part, to immense investments of time on the part of school administrators and teachers to implement the complex standards-based evaluations.

TIF and non-TIF Responsibility for Project Costs

As a grant program, the purpose of the Teacher Incentive Fund (TIF) is to cover (at least some) project costs. However, the TIF grant is finite – it only supports the incentive projects for five years and, in the case of these cohort 3 projects, supports a decreasing share of the incentive payouts over the course of those five years.⁶² Given concerns highlighted in the literature regarding the ability of educator incentive projects (particularly those supported by TIF) to sustain themselves over time (see Chapter 2 for a review of this literature), it is important to understand the extent to which TIF supports these projects. This knowledge is key for discussions of project sustainability since the TIF funds will not support the projects forever.

The following sections demonstrate that, in general, projects used TIF funds to support the majority of project costs. However, not all project implementation costs were borne by TIF, and the proportion of costs that TIF dollars funded varied across project components. In this section, I detail how each projects' costs were distributed across TIF and non-TIF sources.⁶³

⁶² Remember from Chapter 2 that cohort 3 grantees faced a requirement that they assume an increasing responsibility for incentive payouts over the life of the grant.

⁶³ In this section, I only discuss a split between TIF and non-TIF sources due to data limitations. Non-TIF sources include districts, external agencies, building administrators, and teachers.

TIF and non-TIF Share of Overall Costs

The estimated split of costs across TIF and non-TIF sources varied across the three projects in this study (table 11). Costs were most evenly split in the TAP project, where project implementers used TIF dollars to cover 56 percent of project costs and non-TIF sources covered 44 percent of the costs. In the JR project, about three-fifths of costs (62 percent) were supported by the TIF grant and almost two-fifths (38 percent) were covered by non-TIF sources. Costs were least evenly split in the non-JR project, where non-TIF sources covered less than one quarter (21 percent) of the costs and TIF supported over three quarters (79 percent) of project costs. While non-TIF sources covered at least 20 percent of the costs in each district, fiscal outlays associated with the projects were covered almost entirely by the TIF grant in all three districts; non-TIF sources covered less than 10 percent of expenditures in each of the three study sites.

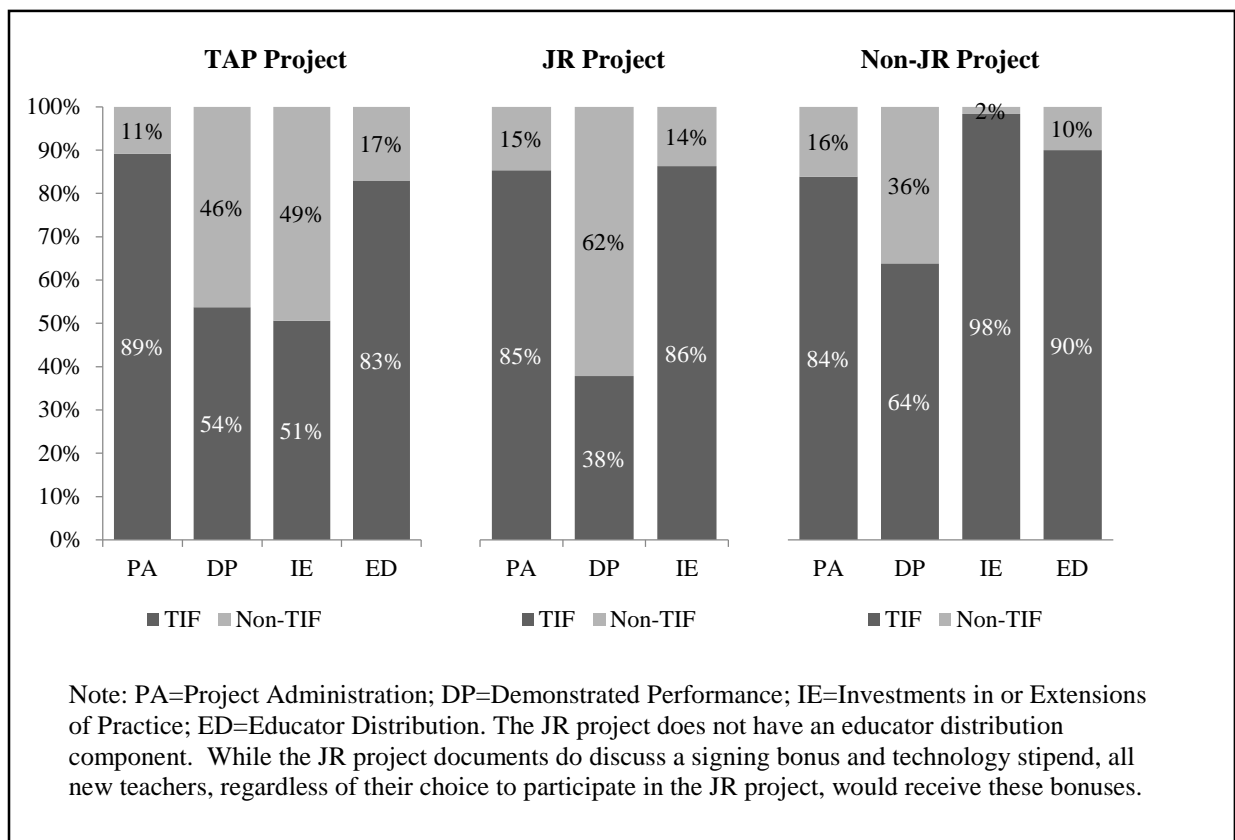
Table 11. Division of project costs and fiscal outlays between TIF and non-TIF sources: 2012-13

	<i>TAP Project</i>		<i>JR Project</i>		<i>Non-JR Project</i>	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
Costs						
<i>TIF</i>	\$3,350,996	56%	\$976,917	62%	\$1,626,074	79%
<i>Non-TIF</i>	\$2,682,551	44%	\$598,442	38%	\$436,469	21%
<i>Total</i>	\$6,033,547	100%	\$1,575,359	100%	\$2,062,543	100%
Fiscal outlays						
<i>TIF</i>	\$3,350,996	91%	\$976,917	92%	\$1,626,074	92%
<i>Non-TIF</i>	\$345,555	9%	\$86,256	8%	\$139,228	8%
<i>Total</i>	\$3,696,551	100%	\$1,063,173	100%	\$1,765,302	100%

Different components of the projects relied more or less heavily on TIF support (figure 10). A few patterns emerged across sites. For instance, in all three sites, project administration was mainly supported by TIF. The TAP project used TIF grant funds to

support 89 percent of project administration, the JR project used TIF dollars for 85 percent of project administration, and the non-JR project used TIF funds to cover 84 percent of project administrations. TIF dollars were also used to support most of the costs of the educator distribution component in the districts with retention bonuses (the TAP and non-JR projects). Across all three sites, non-TIF sources supported a substantial amount of demonstrated performance costs (46 percent in the TAP project, 62 percent in the JR project, and 36 percent in the non-JR project). The districts exhibited different cost distribution patterns for investing in or extending practice. While non-TIF sources bore almost half of these costs in the TAP project, they bore much smaller portions of these costs in the JR project (14 percent) and the non-JR project (2 percent). I examine each of the components in more detail in the next section.

Figure 10. Division of costs between TIF and non-TIF sources, by project component: 2012-13

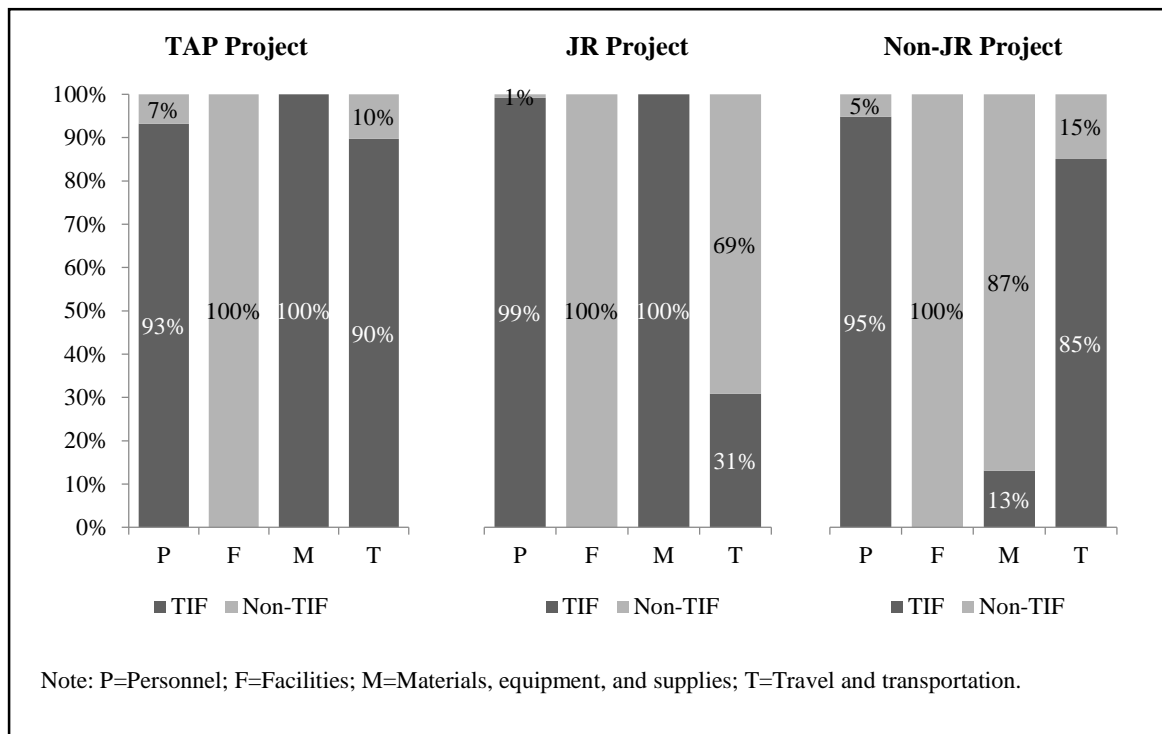


TIF and non-TIF Share of Costs by Component

Differences in who bore the costs of project components were driven by the types of resources that these components required. The next sections outline how the projects divided the costs of various resources (i.e., personnel, facilities, materials, travel, and other) across TIF and non-TIF sources for each of the project components.

Project administration. In all three sites, project administration required personnel, facilities, and travel. The TIF/non-TIF division of costs was similar across sites for some of these resources and dissimilar for others (figure 11). Specifically, all three projects used TIF money to cover nearly all personnel costs (excluding costs for clerical assistance in the TAP project and costs of some advisory committee members in all three sites), and non-TIF sources (in this case, the districts that operated the projects) covered all facilities costs. The TIF/non-TIF division of costs for materials and travel, however, varied across the sites. The TAP and JR projects used TIF dollars to cover all of the project administration materials costs, but TAP dollars only supported 13 percent of these costs in the non-JR project. The reason for this difference was that the non-JR project district paid for the data management software as part of a district-wide contract, while the data management software in the TAP and JR projects was used only for the educator incentive projects and was covered by the TIF grant. In the case of travel costs, while the TAP and non-JR projects used TIF dollars to cover the majority of travel, the TIF grant only covered 31 percent of travel costs in the JR project. This difference was driven by the fact that travel to job recruitment fairs was a key part of the JR project district administrator's job, and the district could not use TIF money to travel to these fairs.

Figure 11. Division of project administration costs between TIF and non-TIF sources, by resource category: 2012-13



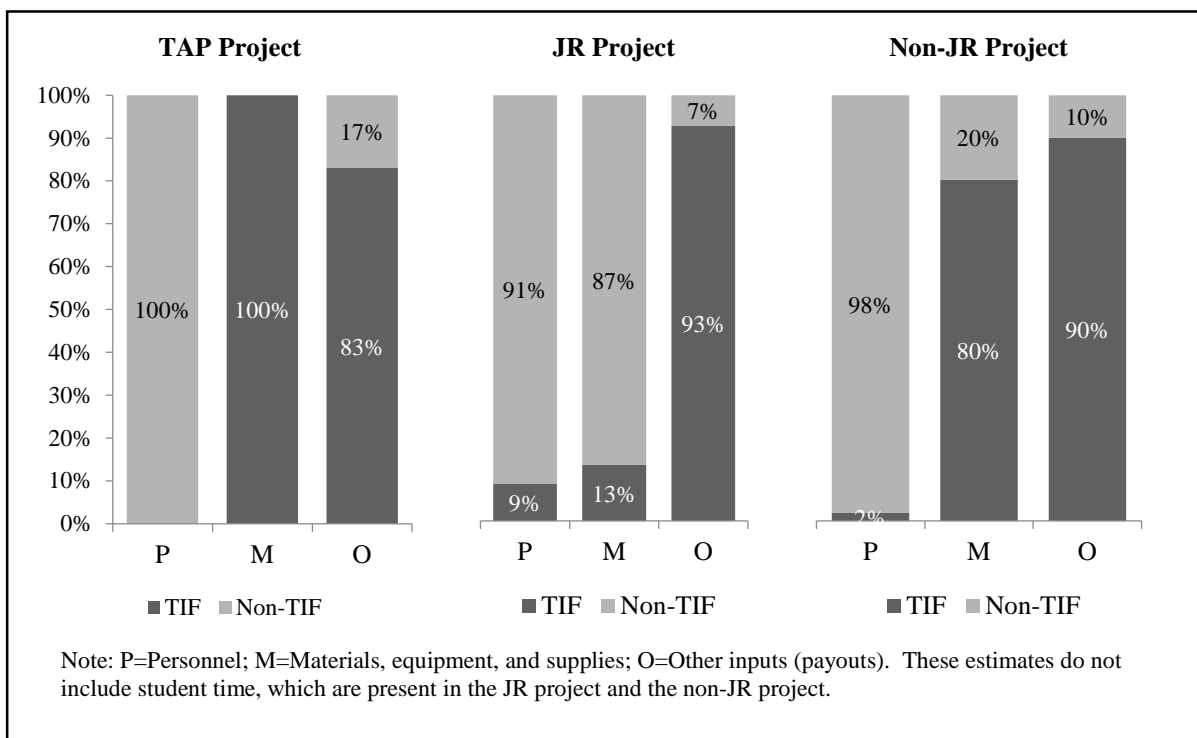
component required personnel, materials, and other inputs. While the division of costs between TIF and non-TIF sources looked similar across sites for personnel and other inputs, the TIF/non-TIF divisions were not uniform across sites for materials (figure 12). In all three districts, personnel costs were largely borne by non-TIF sources. The JR and non-JR projects used TIF money to cover some personnel costs in the form of payments to consultants who provided training to district educators on the standards-based evaluation tool; still, districts and educators within them bore the vast majority of personnel costs for these projects.⁶⁴ The other inputs resource category was comprised of payouts to project participants for their demonstrated performance. All three sites used TIF to cover most of these costs; districts were responsible for some payout costs due to the TIF requirements that grantees cover a

⁶⁴ In the previous section, I describe the time requirements associated with performing and receiving standards-based evaluations. The costs associated with those investments of time were borne either by the districts, which provided salaries to administrators and teachers, or by the educators themselves, when they performed evaluation-related tasks outside of contract hours.

share of the payouts and, in the JR project, for project participants who are not covered by the grant language.

The TIF/non-TIF division of costs for materials for demonstrated performance differed across the three sites in this study. While all three sites used TIF money to cover the cost of evaluation training materials and the non-JR project used TIF money to pay for the additional student assessment, TIF funds did not cover all performance materials costs for the JR and non-JR projects. In these districts, part of educators' evaluation scores depended on a review of portfolios of practice. To create these portfolios, educators had to use materials such as binders, paper, ink, and so forth.⁶⁵ Educators in both districts bore the costs associated with these materials.

Figure 12. Division of demonstrated performance costs between TIF and non-TIF sources, by resource category: 2012-13



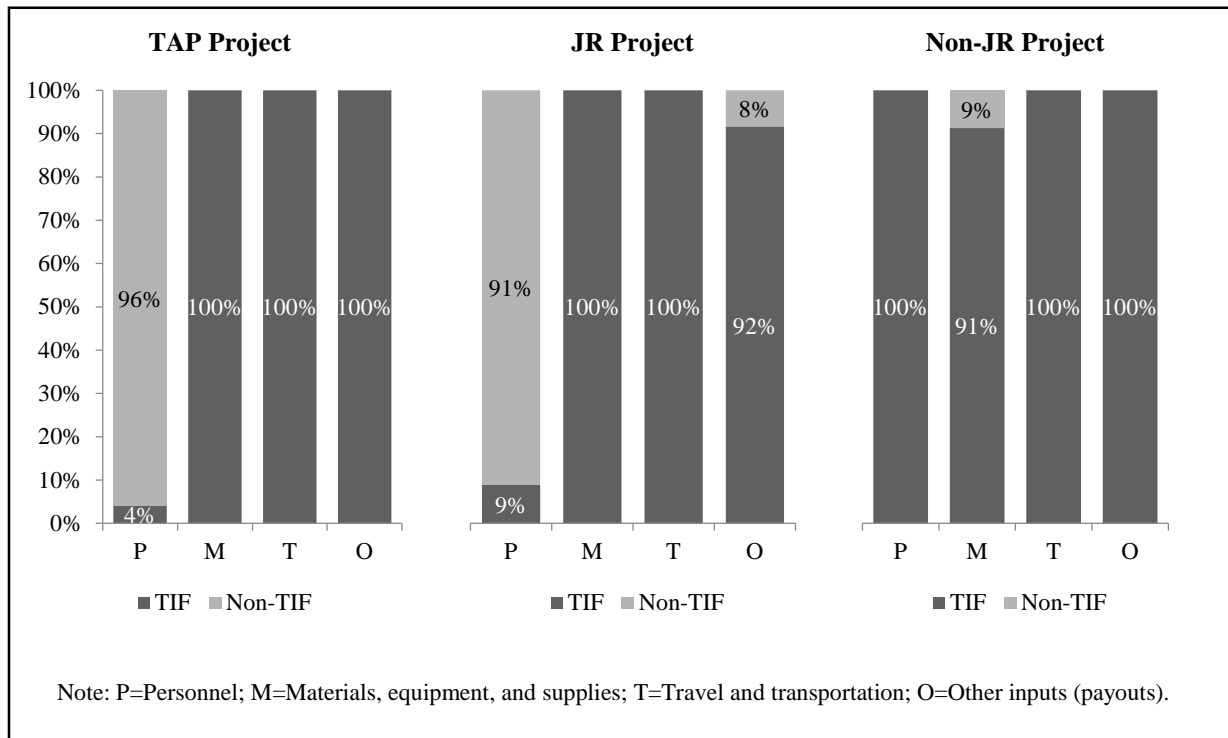
⁶⁵ In Non-JR Project, some educators chose to make electronic rather than physical portfolios. Those educators who did choose to make physical portfolios, however, needed to use binders, papers, ink, and other materials.

Investments in or extensions of practice. The projects' investments in or extensions of practice components required personnel, materials, travel, and other inputs. All three sites relied upon TIF money to cover all or nearly all of the costs associated with materials, travel, and other inputs (which, for this project component, include various job expansion payouts and payments for master and mentor teachers; figure 13). The division of costs for personnel, however, varied across the projects. In the JR and non-JR projects, teachers received payouts for attending professional development. Thus, the costs associated with attendance at professional development accrued not to the "personnel" category or to educators themselves but rather to the TIF grant, since these costs became payouts in the "other inputs" resource category.⁶⁶ In the JR project, though, school-level educators served as site team leaders and site team members, and non-TIF sources covered this cost. In the TAP project, participants did not receive payouts for professional development. Therefore, the costs associated with attendance at professional development in that district accrued to the district (when the educators accessed professional development during contract hours, which was the case for teachers, due to the structure of cluster meetings) or to the educators themselves (when they accessed professional development outside of contract hours or when they had to make up work that they normally would have done during the time that they spent engaging in professional development).⁶⁷

⁶⁶ For the non-JR project, educators would not receive payments for professional development that occurred during contract hours. The cost in this case would be a personnel cost, because substitute teachers covered for teachers who were out of the classroom engaging in professional development. TIF covered the cost of the substitute teachers.

⁶⁷ The small portion of TIF-covered costs was associated with substitute teachers who covered for those teachers who had to attend cluster meetings during class periods that were not their planning periods.

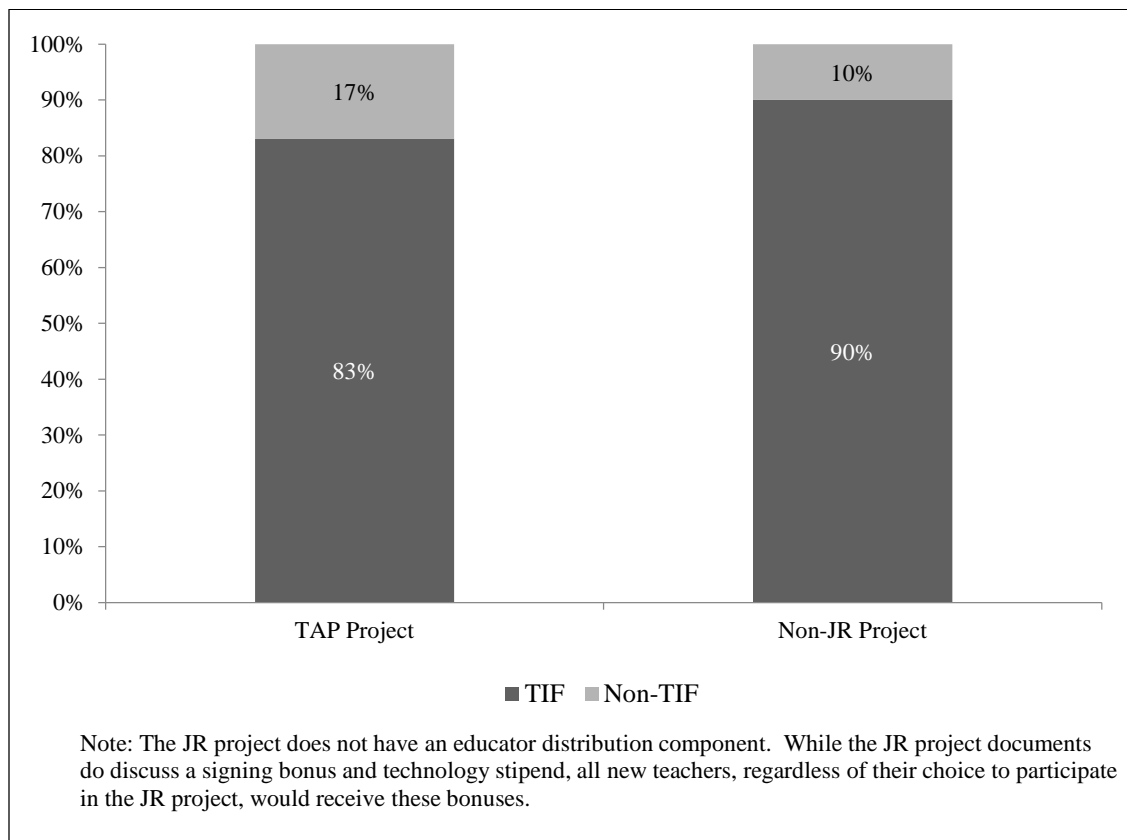
Figure 13. Division of investments in or extensions of practice cost between TIF and non-TIF sources, by resource category: 2012-13



Educator distribution. Most of the costs associated with retention bonuses were borne by TIF. Given the TIF “increasing share” requirements, the districts that had retention bonuses did have a responsibility to cover a portion of payout costs for these retention bonuses, just like they did for demonstrated performance payouts and for payouts associated with investments in or extensions of practice. In the 2012-13 school year, project-specific agreements between grantees and TIF stipulated that the TAP project was responsible for 17 percent of payouts, whereas the non-JR project was responsible for 10 percent of payouts (figure 14).⁶⁸

⁶⁸ For more information about 2012-13 requirements regarding the extent to which grantees had to bear the responsibility for payouts, see Chapter 3 and the decision rule document in Appendix D.

Figure 14. Division of educator distribution costs between TIF and non-TIF sources: 2012-13



Summary: TIF and Non-TIF Responsibility for Project Costs

The findings in this section highlight that while the districts relied upon TIF dollars to cover almost all project fiscal outlays, the TIF grants did not cover all project costs. Some TIF/non-TIF distribution differences across projects were driven by idiosyncratic circumstances (e.g., the TAP and JR projects used TIF funds to cover the data management software, but the non-JR project used data management software that it obtained through a district contract), but one distribution pattern was clear. Except for the project administration component, where the districts used TIF to cover most of the personnel costs, non-TIF sources generally covered personnel costs. In general, educators themselves and the districts that employed them bore the personnel costs associated with implementing the demonstrated performance component and investing in or extending practice. This pattern is especially

noteworthy for the demonstrated performance component, given the heavy investments of time that educators made to implement the standards-based evaluations embedded within the projects. I investigate the challenges that accompanied these investments of time more in the next section.

Human Costs

This section describes findings regarding the human costs associated with investing time and effort to implement these three projects. The focus here is not on the time itself, which I discussed above and captured in estimates regarding the magnitude of project costs. Rather, the focus here is on the *burden* that accompanies educators' investment of time and energy into performing work associated with these multifaceted projects. Recall from Chapter 2 that human costs are "reform-related sacrifices made by individuals and groups of individuals in [an] organization" (Rice & Malen, 2003, p. 639). Rice and Malen (2003) highlight three interrelated categories of human costs: (1) "task costs," or "the time and effort that individuals in the organization expend to meet work demands" (p. 640); (2) "psychological costs," or "burdens borne by individuals often in the form of a general loss of professional efficacy and self-worth" (p. 640); and (3) "social costs," or "tolls paid collectively in the form of worker turnover and loss of community, trust, and collegiality between employees" (p. 640).

Three observations are noteworthy in this discussion of the presence of human costs associated with investing time, effort, and energy into implementing the educator incentive projects in this study. First, because this analysis only investigates the human costs of investing time and effort in the incentive projects, it does not illuminate whether or not other aspects of educator incentive projects (e.g., the introduction of new measurement and

evaluation systems, project eligibility requirements) may incur human costs. Second, participants, particularly those at the school level, noted that the costs they described were not necessarily only due to the incentive plans. They were also due to the layering of the incentive plans on top of other initiatives that were present in their contexts. While participants did argue that the education profession, in general, was stressful, the quotes I selected for this section came from contexts in which respondents were talking directly about the incentive plans or clearly distinguished teaching in general from the incentive plans. Third, while this section focuses on the human *costs* of project implementation, study participants often discussed corresponding *benefits*, such as more nuanced teacher evaluation systems, more opportunities for helpful and high-quality professional development, and extra money.

Individual and focus group interview data revealed the presence of task costs associated with investing time and effort into implementing these incentive projects. Across sites, many study participants at both the district and school level indicated that their educator incentive projects required considerable time and effort to implement. During one conversation, a study participant referenced his/her interview notes and said,

These numbers are going to blow people's minds. Because it was blowing my mind, just writing it down.

Sentiments regarding intense time investments were especially salient with respect to the standards-based evaluation component; for instance, a participant in one site described parts of the evaluation training and evaluations themselves as “cumbersome,” and a participant in another site described the standards-based teacher evaluation system as “painstaking.”

The task costs reported by study participants took a variety of forms. At times, participants linked the time and effort that they put into the projects with physical consequences. For instance, one participant noted that challenges associated with project implementation impacted his/her “stress level.” Another respondent expressed a view that participating teachers were “stretched to the max, stretched so very thin.” Another study participant linked the standards-based evaluation system embedded within the incentive project to physical exhaustion:

I think the [evaluation] process has helped me overall to become a better teacher. The process is a hard process, it is an exhausting process. ...It’s not just the evaluation, I think just teaching in general just wears you out anymore. ...I think [the evaluation] has helped [me] overall. Is it exhausting? Yes.

These sentiments regarding increased stress, being stretched, and feelings of exhaustion indicated that some of the task costs associated with these projects had physical consequences. To these participants, investing time and effort into the incentive plans meant dealing with stress and fatigue.

In some instances, the task costs associated with investing time and energy into implementing the incentive projects manifested themselves as burdens in participants’ personal lives. In these cases, participants noted that work associated with implementing the incentive projects cut into their personal time. These comments highlight the ways in which task costs can spill outside the workplace. The comments below from both district and building educators reflect this position:

I’ve had no life. I’ve had no life for the last two years.

We’re biting into personal time and lives to make sure this thing works.

This [workload] is crazy. I mean, it’s crazy! It’s a point of feeling almost conflicted, I mean we all have families at home ... I play with my kids ’til they go to bed, and then I get out my laptop and sit on the couch with my [spouse] and work, most nights.

And ... I save one day of the weekend that's totally work-free, but [I work on] Saturday or Sunday anywhere from an hour to three or, very occasionally, more, very rarely more. ... My priorities aren't always what I want them to be.

Comments like these suggest that participants' investments of time and effort impacted their interpersonal relationships outside the school building. That is, time spent on projects replaced time spent on other interpersonal activities (e.g., a life outside of work, family activities).

Third, in a small number of instances, participant comments suggested that task costs may have manifested themselves in psychological ways. These comments highlighted how investments of time and effort into project implementation impacted participants' feelings and perceptions of themselves as professionals. For instance, one participant described feeling guilty because s/he perceived that s/he had too many teachers to support and not enough time to support them all:

I spend time feeling guilty each week ...[because] I can't give the attention to the teachers like I want or like they deserve.

Another comment from the same participant highlights tradeoffs between time and professional efficacy:

I've asked, how do we catch a break here? And the answer is basically ... do less would be the way to do that. Don't do as well. And that's not the way we roll here.

This comment highlights a perception that the only way to reduce the burden associated with investing time in the projects would be to "do less"; however, this participant did not think that "do[ing] less" was compatible with standards of professional practice to which s/he and his/her colleagues subscribed.

Despite the presence of the task costs highlighted above, study participants often provided a nuanced view of time burdens when they discussed the standards-based educator

evaluation systems that were part of the projects. What one study participant described as a “love/hate relationship” emerged: while participants highlighted the immense time burdens associated with carrying out the evaluations, they situated these burdens within a larger discussion of the perceived benefits of the new systems. According to building educators:

You know, initially ... you get a little aggravated because [the evaluation is] so much, it seems like at certain times, but in the long run if you really step back and are honest, I think it's beneficial. ... And if those students benefit, then just because I'm inconvenienced or I have some other stuff to do, that really doesn't matter. If I didn't want to do that, you know, I should have gotten a job someplace else. So this is part of the job.

[The teacher evaluation] takes a long time, and if you're doing it right, ... it takes a lot of energy, but it is making an impact in classrooms. And as far instruction goes, in student learning. And so, overall, I think it's a great process.

These quotes suggest that project-related task costs existed in the study sites. While the participants who discussed these costs also may have had an awareness of and appreciation for perceived benefits associated with the projects (and, in some cases, the standards-based evaluations embedded within them), the costs were real.

Conversations regarding human costs were limited to a small sample of study participants and occurred during a small portion of interviews and focus groups. Still, these data suggest that investing time and effort in project implementation actually imposed additional costs to participants – costs over and above the value of the time spent on project implementation. These task costs impacted participants in physical, personal, and psychological ways. While difficult to quantify, they existed, and understanding them is an important part of understanding project implementation.

Summary

This chapter presents findings regarding the total societal opportunity costs associated with implementing the three educator incentive projects during the 2012-13 school year. The

first section of the chapter briefly identifies the resources required to implement the projects. The second section of the chapter highlights the magnitude of the total societal opportunity costs associated with using those resources to implement the incentive projects rather than using them to pursue other goals. In the third section of the chapter, I discuss the extent to which TIF bore these total societal opportunity costs and the extent to which it did not. In the final section of the chapter, I present findings regarding the presence of human costs associated with implementing these complex reforms. While the numerical cost estimates in the early part of the chapter capture the time that participants invested in the implementation of these complex projects, they do not reflect the burdens that accompanied the investment of time and effort into project implementation. A recognition of the existence of these human cost burdens is key to understanding the full range of costs associated with project implementation.

In this chapter, I report that implementing the three incentive projects during the 2012-13 school year required a variety of resources (personnel, facilities, materials/equipment/supplies, travel/transportation, and other) for project administration, demonstrated performance, investments in or extensions of practice, and educator distribution. I estimate that the total societal opportunity costs associated with these resources were just over \$1.5 million for the JR project, \$2 million for the non-JR project, and \$6 million for the TAP project. These costs included fiscal outlays of approximately \$1 million for the JR project, almost \$1.8 million for the non-JR project, and nearly \$3.7 million for the TAP project. The ways in which these costs manifested themselves for the administration, demonstrated performance, investments in or extensions of practice, and educator distribution components varied across the projects, but across all three projects, the

most costly component was the demonstrated performance component. Costs associated with the projects' demonstrated performance components were driven by performance payouts and the time that personnel (mainly school administrators and teachers) needed to devote to performing standards-based evaluations. TIF funds were used to cover more than 50 percent of costs in all three sites and more than 90 percent of fiscal outlays in all three sites. Participants reported the presence of human costs associated with investing time and energy in project implementation; these task costs manifested as burdens over and above the time itself and impacted physical, personal, and psychological aspects of participants' lives.

I draw upon these findings about the magnitude and TIF/non-TIF division of project costs and the presence of human costs in the next chapter, in which I discuss the findings' implications for research and policy.

CHAPTER 5: DISCUSSION

This chapter builds on the findings I report in Chapter 4 to provide insights into the ways in which this study contributes to the conversations surrounding educator incentive plans and cost analysis of educational interventions. First, I review the study's key findings. Next, I describe this study's implications for both research and practice. I then outline a number of study limitations and describe how these limitations impact conclusions that can be drawn from the study. I finish with suggestions for future research.

Key Findings

The previous chapter describes this study's findings in detail. Briefly, this study shows that the three educator incentive projects required a variety of resources for project administration, demonstrated performance, investment in or extensions of practice, and (for the TAP and non-JR projects), educator distribution components. These resources were associated with high total societal opportunity costs; estimated one-year operating costs were over \$1 million in all three sites, and implementation of the costliest project required resources valued at over \$6 million. These costs were considerably higher than fiscal outlays, which illuminates the presence of "hidden" opportunity costs, or costs that will not show up on budgets or performance reports but exist nonetheless.

Because the projects, at times, approached the components differently, the factors that drove each project's cost varied. For investments in or extensions of practice, for instance, the JR and non-JR projects' decisions to contract for professional development services impacted their materials costs, while the TAP project's required, weekly professional development requirement impacted personnel costs. While both the TAP project and the non-JR project included an educator distribution component that awarded retention bonuses

to participating educators, choices regarding the size of those bonuses and how many educators were eligible for them affected the per-participant costs associated with these awards. While total societal opportunity costs varied across projects, one finding that was consistent across sites was that the demonstrated performance component was costly – it was, in fact, the most costly project component across all three projects – and that a substantial portion of these demonstrated performance costs were associated with educators’ investment of time to implement the new standards-based evaluation systems.

For all three projects included in the study, the districts used TIF money to cover almost all fiscal outlays related to project implementation, but the districts did not use their TIF grants to cover all opportunity costs. In fact, the TAP project used TIF money to support only 56 percent of one-year implementation costs. Across projects, TIF funds were used to support the majority of the payout costs and personnel costs for project administration. However, the districts generally relied more heavily on non-TIF funds to support personnel costs for other components, especially for the demonstrated performance component. Again, this finding is related to the heavy time requirements associated with administrators’ and teachers’ work to implement the complex new standards-based evaluation tools.

These significant investments of time and effort into project implementation – be it for the demonstrated performance component or other components – were associated with human costs. Participants’ comments regarding the work they performed for project implementation highlighted task costs that were manifest in physical, personal, and psychological ways; still, participants often presented a nuanced view of these costs as they simultaneously (a) expressed the challenges associated with such a heavy implementation burden and (b) praised the projects (or, more precisely, often the standards-based evaluations

that were part of the demonstrated performance components) for perceived improvements in teaching and learning.

In sum, the structure of the incentive components (demonstrated performance, investments in or extensions of practice, and educator distribution), eligibility for the projects and their components, and the size of the awards drove the total societal opportunity costs of the incentive plans. Those who were involved in the projects invested a great deal of time and energy into making them work, and these investments were associated with the presence of human costs. These findings have significance for research and policy, which I describe in more detail in the next section.

Significance and Implications

This study provides several key insights into the costs associated with implementing TIF-supported educator incentive projects. Some of these insights have implications for theory and research, whereas other insights have implications for policy and practice.

Implications for Research

This study has two sets of implications for research. The first set of research implications has to do with literature on educator incentive plans, and the second set of research implications has to do with the body of research on the cost analysis of educational interventions. I discuss each of these in the following sections.

Literature on educator incentives. As I highlight in Chapter 2, current research on educator incentive plans sheds light on the theory of action behind these programs (Glazerman, 2004; Malen et al., 2009), the design of the programs, including the potential bases for financial awards (Heneman, Milanowski, & Kimball, 2007; Humphrey et al., 2012), how, if at all, the incentive plans may be associated with changes in outcomes like educator

retention and student achievement (Glazerman & Seifullah, 2012; MacAllum et al., 2011; Wiley et al., 2010), and the implementation challenges that these projects have faced, such as issues associated with capacity and stakeholder support (Malen et al., 2011; Malen et al., 2015; Rice et al., 2012). This study recognizes that investigation of the opportunity costs associated with educator incentives, too, should be part of the discussion surrounding educator incentive plans. Without such knowledge, the research community cannot engage in informed discussions regarding the implications of investing in one set of projects as opposed to another set of projects. Furthermore, this study adds to the extant body of literature by extending the discussion of capacity and stakeholder support issues. In the following paragraphs, I describe the ways in which this study contributes to the research community's knowledge about the capacity and stakeholder support challenges associated with educator incentive plans.

Capacity. A more comprehensive understanding of the total societal opportunity costs (not just the fiscal outlays) related to incentive projects is a key part of understanding their implementation, since capacity to implement the projects and sustain them long enough to realize the long-term outcomes proposed by the theory of action requires access to and adept deployment of a variety of resources. This study's findings regarding the magnitude of project costs adds to the research base on the capacity of districts to implement and sustain educator incentive plans by showing that (a) the total societal costs associated with these projects were substantial (over \$6 million in total for the TAP project and over \$13,000 per participant in the non-JR project, for example); and (b) at the time of the study, the costs associated with these projects exceeded their fiscal outlays. Especially given earlier findings that educator incentive plans can strain district and site capacity (Malen et al., 2015), this

finding has notable implications for future research regarding district and educators' capacity to bear the opportunity costs associated with the projects and to implement the programs with fidelity.

Findings related to the TIF/non-TIF division of costs also have implications for research on the capacity of districts to implement and sustain these types of programs. This study found that the districts used TIF funds to cover a substantial portion of the projects' fiscal outlays during the study year. At least in these sites and in this year, grantees were relatively dependent on the grant funds for fiscal resources to implement their programs. Given TIF requirements⁶⁹ that grantees had to contribute an increasing share of funds to support the performance incentives and given the fact that the TIF grant, like any other grant, is only available for a finite period of time, this finding adds to the body of literature that highlights sustainability as a capacity challenge that can undercut the ongoing viability of educator incentive projects (see, for instance, MacAllum et al., 2011; Malen et al., 2011; 2015). When the TIF support lessens or goes away entirely, previously-supported projects will need to secure other funds or reallocate existing funds if they hope to keep the plans in place over time.

This study also finds that, while the districts used TIF to cover nearly all of the fiscal outlays associated with project implementation, they did not use TIF money to cover all project costs. This finding has implications for research that attempts to identify the societal costs of educator incentive projects. Understanding levels of public investment in government-sponsored programs is important, but that understanding alone likely will not uncover the entirety of costs to members of the society in which the project operates. This

⁶⁹ Recall that increasing share requirements were only in place for the first three rounds of TIF grantees; cohort 4 grantees (who are currently implementing their TIF-supported projects) did not face a cost-sharing requirement.

study illuminates that, despite each of the projects' receipt of a sizeable federal grant, all of the incentive plans required the investment of additional resources that came from sources other than the TIF funding stream. Perhaps most notably not covered by TIF were the personnel costs associated with school administrators and teachers spending time implementing the new, time-intensive standards-based evaluation systems. A variety of evaluations of educator incentive projects across the United States (Humphreys et al., 2012; MacAllum et al., 2011; Malen et al., 2011, 2015; Springer et al., 2010) have found that these types of projects often face issues related to project sustainability. Given that this study finds that districts, educators within them, and outside partners needed to bear some of the costs associated with project implementation, it adds to the body research regarding the feasibility of project implementation and the issues of project capacity, in general, and sustainability, in particular.

The human cost findings in this dissertation also have implications for the capacity of districts and those who work in them to implement and sustain educator incentive initiatives. Prior research has already demonstrated that the implementation of educator incentive programs place heavy demands on educators' time (see, for instance, Malen et al., 2009, 2011, 2015). This study confirms that finding for additional incentive plans and frames the finding in the lens of human cost. This finding suggests that, if not addressed, human cost concerns can undercut districts' capacity to implement these types of reforms. If administrators and educators burn out, then they may not be able to work effectively toward implementing the projects and sustaining them long enough to realize their desired outcomes.

Stakeholder support. Findings related to the magnitude of project costs and the division of costs between TIF and non-TIF sources could have implications for stakeholder

support for educator incentive plans. Given that districts have access to finite resources, a district's choice to implement an educator incentive plan reduces its ability to invest in other desired policies or programs. Insights from this study regarding (a) just how much programs like this can cost and (b) the ways in which districts that have implemented these projects have leveraged TIF and non-TIF sources to support these projects could influence how important stakeholders view these programs and their willingness to support them amid a context of other potentially promising initiatives.⁷⁰

Human cost findings also shed light on issues of stakeholder support. If participants do, in fact, face burdens associated with investing time and effort into implementing the incentive projects (in other words, if they face task costs), and if these task costs manifest themselves such that they impact participants in physical, personal, and psychological ways, then important stakeholders may be unwilling to support these programs. As noted in Chapter 2, programs that lose the support of key stakeholders may lose political viability if influential stakeholders remove their endorsement of the program and may lose practical viability if those who need to implement the program are unable or unwilling to do so. Furthermore, stakeholder support issues can undercut the goals of incentive programs if high-quality educators – the administrators and teachers that incentive programs aim to reward or induce into the profession – become disenchanted, offended, or unmotivated.

Literature on opportunity cost analysis. This study's use of the cost template approach provides an opportunity for continued conversation surrounding the costs associated with implementing educator incentive plans. Additionally, this dissertation tackles an issue that is not commonly addressed in cost analyses of educational interventions.

⁷⁰ Of course, cost is only one factor that impacts the desirability of a potential policy option. Information about the policy's effectiveness could also impact the extent to which stakeholders are willing to invest in a particular course of action. I turn to the issue of program effectiveness later in this chapter.

In both ways, it adds to the literature on the opportunity costs of educational reforms and the implications of cost for the implementation and sustainability of incentive pay systems for educators.

The utility of the cost template approach. This study serves as an example of how a resource-cost study can systematically uncover the opportunity costs associated with educational interventions. In this resource-cost study, I used a cost template to organize and array the full range of resources required for one-year implementation of three educator incentive projects that displayed a range of program designs. I also used the cost template to outline the costs associated with these resources and the division of these costs between TIF and non-TIF sources. Because the cost template approach affords transparency, it opens the door for a continued discussion regarding the costs associated with educator incentives. This transparency makes it possible for others who wish to study incentive projects to replicate the analysis. It also allows other analysts to impose different conditions – such as those associated with a particular geographical context – on the analysis and investigate the impact of these different conditions on the cost of implementing the incentive projects.

As part of the growing number of cost studies in the field of education, this dissertation provides additional evidence that researchers can tackle the “paradoxes and possibilities” associated with uncovering the opportunity costs of education reforms (Rice, 1997). Adding to the body of cost analysis of educational research is a valuable endeavor; research on the costs associated with different education reforms is vital in the pursuit of an informed debate on the ways in which choices to invest in one set of policies or practices impacts the ability to pursue other potentially promising policies or practices.

Human costs. Investigation of human costs is not a common focus in the cost analysis literature. The findings in this study, however, suggest that the human costs of educational reform may be an important consideration. While these costs are difficult or perhaps impossible to quantify, these costs are nonetheless real. This dissertation confirms the presence of human costs associated with implementing the educator incentive projects in the three districts in the study. Participants highlighted challenges they faced due to the time and effort they needed to invest in the implementation of the educator incentive plans in their districts. These task costs (Rice & Malen, 2003) had physical, personal, and psychological impacts on project participants. Understanding the existence of these human costs is an important contribution to the discussion of the opportunity costs of the reforms in this study because they constitute part of the full range of resources associated with implementing these educator incentives.

Policy Implications

This study's findings also contain implications for policy and practice. In this section, I discuss how this study suggests that policymakers and practitioners should take a comprehensive view of cost when they consider policy alternatives such as incentive pay. I also outline the ways in which this study highlights possibilities for resource substitution.

Comprehensive view of cost. The results of this study suggest that policymakers and practitioners who are currently implementing educator incentives or who are considering implementing incentive plans should take a more comprehensive view of what constitutes program costs (if they have not already adopted a more comprehensive perspective). This research finds that implementation of these plans involved a range of resources; it further finds that large portions of the costs associated with these plans did not translate into

expenditures. When costs do not present themselves as transfers of money from one party to another, they can remain hidden. Hidden though they may be, these costs are real: in the case of the projects in this study, non-TIF sources (districts and the educators within them) bore many opportunity costs associated with implementing the incentive plans, especially the demonstrated performance component (and, sometimes, investing in or extensions of practice). Districts (and the taxpayers who fund them) bore some of these opportunity costs through the salaries that they paid to their employees. When the project participants were engaging in project-related work, they were not engaging in other tasks that the districts might have also valued.⁷¹ Educators themselves bore these opportunity costs when they had to do project work during the evening or on weekends. During those periods, because their salaries were not covering their time, they essentially subsidized the work and lost the opportunity to focus on other goals that may have been important to them. Policymakers and practitioners who do or may implement educator incentives should realize that the projects come with (relatively high) opportunity costs, that these costs are associated with resources that are integral to program operation, and that failing to acknowledge them may lead to challenges in securing the resources necessary for project implementation. They may also gain a deeper understanding of what these comprehensive program costs might look like in their contexts by swapping the standardized prices on the cost template for localized prices.

Substitutability of resources. This study also has implications for how policymakers and practitioners might think about resources and the extent to which they consider the substitutability of resources. The different projects in this study used resources

⁷¹ It is possible that the incentives encouraged employees to make more productive use of their time, which would be a benefit to the district and its taxpayers. Even if the incentives do encourage productivity – one of the purposes of the incentives in the first place – they encourage it to one particular end and an opportunity cost is still incurred, since the productive use of time is focused on that end and not other potential priorities both within the district and within the community at large.

in different ways, and these choices impacted the magnitude and distribution of project costs. For instance, in the TAP project, teachers underwent four formal observations per year as part of the standards-based evaluation process. School administrators (principals and assistant principals) shared responsibility for conducting these evaluations with master and mentor teachers. Not only did this choice reduce the overall cost of the project (since the salaries of master and mentor teachers are lower than the salaries of building administrators), but this choice also temporarily shifted this cost from the district (which pays school administrators' salaries) to the TIF grant (which pays for the master and mentor teacher salary augmentations), which has implications for sustainability over time. Additionally, choices that the study sites made about the provision of professional development impacted costs. Specifically, the JR and non-JR projects relied on contracts with external providers for professional development. This choice shifted costs away from personnel and into materials, and it also temporarily shifted costs away from the districts and onto the TIF grant.

Additional resource substitution considerations may exist. For instance, districts could choose to rely more heavily on assistant principals than principals to engage in teacher evaluation; since assistant principals' salaries are lower than principals' salaries, shifting this responsibility to assistant principals would lower the overall project cost. Districts could also work to decrease the risk of employee burnout by shifting the cost burden away from some personnel and distributing it to other personnel. For example, at the district level, districts could attempt to reduce the implementation burden on project administrators by hiring additional central office staff, who could engage in clerical work, provide professional

development, evaluate project data, or support schools as they implement the project.⁷² At the school level, districts could hire additional evaluators (principals, assistant principals, master or mentor teachers, or other personnel who could serve the role of evaluators) so that it would not be necessary for employees to engage in project work during the evening or on weekends. While I do not have evidence that projects in this study engaged in all of these types of substitutions, they could have. These choices would have had implications for both the magnitude and the distribution of costs. Because these choices could also impact the effectiveness of the initiative (if policymakers or practitioners replace a more effective resource with a less effective resource) or the equity of the initiative (if policymakers distribute work more or less equitably across employees), policymakers should exercise caution when they consider resource substitutions.

Summary: Research and Policy Implications

The findings in this dissertation have implications for both research and policy. On the research side, this study adds to the literature on educator incentive projects by focusing on their opportunity costs, which is, to date, an understudied aspect of these projects. Findings regarding the magnitude of project costs, the TIF/non-TIF division of project costs, and the human costs of investing time and effort into project implementation have implications for capacity and stakeholder support issues that have arisen as challenges facing educator incentive plans. This dissertation's reliance on the cost template approach provides an opening for future analysis of these types of policies, and its identification of the presence of human costs suggests that cost analysis should pay more attention to these poorly understood aspects of project cost. On the policy side, this dissertation illuminates the

⁷² The JR project did engage in this type of activity when the district hired summer clerical assistance. Additionally, while I do not discuss it in detail in this dissertation since it occurred after the 2012-13 school year, the district also allocated part of a data analyst's time to the JR project.

resources and costs associated with implementing these projects, which can inform policymakers who are interested in understanding the feasibility of educator incentives in their local contexts. It also calls attention to resource substitutability considerations, which can be important issues for those who might want to consider ways to reduce project costs, to shift the cost burden from one set of stakeholders to another, or to align projects with existing or available resources.

Limitations

Several considerations shape the generalizability of this study's conclusions. These considerations are related to (a) the scope of the study, (b) the discussion of the magnitude of project costs, (c) the discussion of the extent to which TIF and non-TIF sources bore project costs, and (d) the discussion of human costs. I discuss each below.

Scope of Study

This study is limited to particular projects and specific aspects of these projects' implementation, which is impactful for three reasons. First, the sites in this study are only a particular subset of the types of organizations that operate educator incentive plans. All three study sites are traditional public school districts; implementation in these contexts may differ from implementation in places like states, non-traditional local education agencies (such as charter school districts), individual public schools, and private school settings. Additionally, as I note in Chapter 3, none of the study districts is a large urban district, and all of the districts are in the South. While, in general, cost studies are not intended to be generalizable to contexts that are unlike those under study, the characteristics of the sites in this study are not shared by all entities that could or do implement educator incentives.

Second, due to data limitations, this study only focuses on one year of project implementation, not on the process of obtaining the project funds, project planning, or project evaluation. Costs associated with these aspects of educator incentive plans could be substantial and may likely vary across different projects. For instance, the process of obtaining a grant such as TIF may incur costs, and these costs might vary across projects depending on the types of personnel (e.g., grant writers, other district personnel) who are involved in that process. Project planning costs might vary depending on factors such as whether or not the implementers also design the project, since those who design their own plans would need to invest time in initial planning. Evaluation costs could vary based on issues surrounding study design and the availability of researchers in the location of the project. Because planning and evaluation clearly incur costs, this study does not provide a picture of all of the costs associated with educator incentive plans in the study sites but rather is limited to the costs associated only with implementing them. Additionally, because this study focuses only one year of project implementation (2012-13), it only captures one snapshot of the phase-out of TIF support for the incentive payouts. Given TIF requirements that cohort 3 grantees assume an increasing share of the responsibility for payouts each year, the TIF/non-TIF division of costs will be different for all projects in the following year of project implementation.

Finally, this study does not focus on the effectiveness of project implementation, because evidence on the outcomes of the particular projects involved in the study is neither readily available nor standardized across the sites. Thus, due to a lack of focus on project outcomes, while the analysis above suggests that these projects were costly, it does not necessarily imply that the projects were poor investments. It is entirely possible that the

benefits associated with these projects outweighed the costs. Unlike cost-benefit analyses, which directly compare the costs and benefits of an initiative, this study does not permit conclusions regarding the projects' absolute worth (i.e., whether the benefits of the projects outweigh their costs). Additionally, unlike cost-benefit analyses of multiple initiatives or cost-effectiveness analyses, which provide ratios of costs to effectiveness for a range of projects with similar outcomes, this study does not permit conclusions regarding the projects' relative worth (i.e., whether the extent to which the benefits outweigh the costs is greater for these projects than for alternative policy options).

Despite these limitations regarding the scope of the study, this dissertation systematically investigates the resources required to implement these particular educator incentive plans and provides estimates regarding the opportunity costs associated with these resources; even without generalizability to other educational institutions and even absent information about project outcomes, such systematic information about resources and costs is important in a landscape where such information is often not widely available.

Estimates of Cost Magnitude

Another set of considerations surrounds this study's discussion of the magnitude of project costs. In this dissertation, I relied upon the experience of key individuals involved in project implementation to gather information to fill in the resource-cost templates. The strength of this approach lies in its ability to garner information from knowledgeable participants who have particular insights about project implementation. They understand the program and its varied components, they know how the program operates, and they have a clear sense of what they need to ensure that the program operates well. While this approach has strengths, it is only one way to gather information about the magnitude of project costs,

and other methods (e.g., a survey of all participants, regardless of level of engagement with the project) might generate different estimates of how much of each resource is required for project implementation.⁷³

Additionally, each of the three projects underwent changes as implementation progressed, and the structure of the projects appeared to be somewhat fluid across years. I attempted to discuss costs during one set time period (2012-13); however, since the projects' structures changed from year to year, so too did the resources necessary to implement them. Therefore, conclusions based on this study's findings are valid only for the projects as they were structured during school year under study, not for other years in which the projects may have operated differently.

TIF and non-TIF Responsibility for Costs

This dissertation's analysis of who bore which project costs is limited to TIF and non-TIF sources, which obscures the cost burden for the variety of non-TIF stakeholders who were associated with the incentive plans in the study, such as school districts and their staff (district administrators, school administrators, and teachers). Given lack of data regarding the amount of time that building educators spent on activities like evaluations and professional development during compensated and uncompensated time, it was difficult to distinguish the extent to which districts covered these costs (through the payment of salaries to the educators who were carrying out the tasks) and the extent to which educators themselves took on this burden. Therefore, while the results of this study suggest that both districts and staff within them bore these costs, they do not illuminate how the cost burden

⁷³ Still, it is important to note that the time estimates associated with school administrators conducting formal standards-based evaluation that I report in this study are in line with similar estimates from a study of the implementation of Chicago's REACH educator evaluation system (Spote et al., 2013) even though I relied on reports from key personnel and the Chicago study relied on widely-distributed surveys.

was distributed between districts and their staff. This distinction has implications for districts' budgets and employee burnout.

Despite an inability to discern the extent to which various non-TIF stakeholders bore costs associated with project implementation, this study highlights the extent to which TIF did and did not support the projects, which is a key first step in understanding the viability of grant-supported programs. Understanding how much the grant supported the incentive plans is important for sustainability planning, since (for the first three cohorts of TIF grantees) the proportion of project costs supported by the grant would decline over the award period by design and since (for all grantees) the TIF grant will end after five years and will no longer support the incentive plan at all.

Human Costs

A final set of limitations surrounds this study's discussion of the human costs of the educator incentive plans. Given the fact that the participants in this study represented a subsample of project participants and that interviews and focus groups addressed a wide range of topics (not just human costs), this study provides information on the presence of human costs but does not illuminate how widespread these costs are. From this study alone, it would not be appropriate to conclude that these costs exist in all schools or for all educators. Interpretations about the breadth of human costs across the study sites are not possible from the data that I gathered. Furthermore, because of limited time for interviews, I only gathered data on the human costs associated with investing time and effort into project implementation. I did not investigate the extent to which other key aspects of the projects, including but not limited to the process of tying educator compensation to their own or their students' performance, might impact participants' social and psychological well-being.

Accordingly, this study only sheds light on a portion of the potential human costs that accompany the introduction of an incentive plan into an educational organization. Additional costs may well exist; the fact that I do not highlight them here does not make them less real or consequential for the lives of those who implement these reforms. Despite these considerations, this study's illumination of the existence of human costs is a noteworthy contribution to the collection of resource-cost studies, which do not typically highlight these aspects of project costs.

Recommendations for Future Research

This study represents an important first step in gathering information about an understudied aspect of educator incentive projects and is an addition to the growing body of resource-cost studies in education. It also suggests several areas for future research. I outline several possibilities below.

First, future research should work toward the creation of a clear, coherent typology of educator incentive models that takes into account multiple aspects of program design (beyond program designer and bases for awards). The typology should also take into account multiple funding structures, since multiple funding sources exist for educator incentives and since one main source – TIF – has changed requirements over time. Researchers could then create a database that would allow investigation of the range of costs associated with each of the models contained within the typology. As scholars continue to build the knowledge base regarding the effectiveness of these types of programs (which I address in more detail in the next paragraph), they can use the database to pair information regarding program outcomes with the information on the costs of a range of incentive projects to gather a set of cost-effectiveness ratios that can inform policy and practice.

Second, in order for future cost analyses to link the costs of projects to their outcomes, researchers need to come to a greater consensus on common, comparable outcomes (such as comparable measures of teacher and principal recruitment, teacher and principal retention, or improved student achievement) that would be part of these studies. While reaching this consensus might be difficult, and while multiple challenges exist with respect to collecting data on these outcomes, cost-effectiveness or cost-benefit analyses that rely on high-quality outcome information could shed light on the extent to which some designs are more cost-effective than others and whether these projects are prudent investments of public resources.

Third, future research on educator incentives should help shed light on the distribution of costs between districts and educators within them. Studies should illuminate how much time or what portion of time school-based educators spend on activities surrounding evaluation and professional development. Improved understanding of how much time educators spend (or are expected to spend) on this work would help to clarify the extent to which districts support the costs of these important activities and the extent to which principals, assistant principals, and teachers shoulder the weight of this work.

Finally, research should continue to investigate the human costs of education reform, more generally, and educator incentive plans, in particular. Future research should attempt to verify the presence of human costs associated with education reforms and should work to identify additional categories of human cost or nuances within existing categories. Future work should also investigate the human costs associated with project implementation more broadly (as opposed to focusing solely on the burdens associated with investing time and energy in project implementation, as I do in this study).

Summary

This dissertation represents a first step in filling the gap in knowledge regarding the full range of resources required to implement educator incentive projects and the opportunity costs associated with investing those resources in incentive plans rather than other potential policy options. In doing so, it adds to the collection of studies that investigate these prominent education reforms, extends the research community's knowledge about what it takes to implement these projects, and provides baseline information for considering these projects' cost-effectiveness. This dissertation also adds to the collection of cost studies in education and demonstrates how analysts can apply the resource-cost method to evaluations of education reforms. As a first step, this study suggests multiple avenues for future studies that can continue to inform how researchers and policymakers approach educator incentive initiatives.

APPENDIX A: IRB APPROVAL LETTERS



UNIVERSITY OF
MARYLAND

INSTITUTIONAL REVIEW BOARD

1204 Marie Mount Hall
College Park, MD 20742-5125
TEL 301.405.4212
FAX 301.314.1475
irb@umd.edu
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DATE: January 18, 2013

TO: Kathleen Hoyer
FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [413524-1] Making the Hidden Visible: A Cost Analysis of Educator Incentive Programs that Receive Grants from the Teacher Incentive Fund (TIF)

REFERENCE #:

SUBMISSION TYPE: New Project

ACTION: APPROVED

APPROVAL DATE: January 18, 2013

EXPIRATION DATE: January 17, 2014

REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 7

Thank you for your submission of New Project materials for this project. The University of Maryland College Park (UMCP) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure which are found on the IRBNet Forms and Templates Page.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of January 17, 2014.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact the IRB Office at 301-405-4212 or irb@umd.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Maryland College Park (UMCP) IRB's records.



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DATE: December 23, 2013

TO: Kathleen Hoyer
FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [413524-6] Making the Hidden Visible: A Cost Analysis of Educator Incentive Programs that Receive Grants from the Teacher Incentive Fund (TIF)

REFERENCE #:
SUBMISSION TYPE: Continuing Review/Progress Report

ACTION: APPROVED
APPROVAL DATE: December 23, 2013
EXPIRATION DATE: January 16, 2015
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 6 and 7

Thank you for your submission of Continuing Review/Progress Report materials for this project. The University of Maryland College Park (UMCP) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure which are found on the IRBNet Forms and Templates Page.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of January 16, 2015.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact the IRB Office at 301-405-4212 or irb@umd.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Maryland College Park (UMCP) IRB's records.



UNIVERSITY OF MARYLAND

INSTITUTIONAL REVIEW BOARD

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DATE: December 10, 2014

TO: Kathleen Hoyer

FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [413524-7] Making the Hidden Visible: A Cost Analysis of Educator Incentive Programs that Receive Grants from the Teacher Incentive Fund (TIF)

REFERENCE #:

SUBMISSION TYPE: Continuing Review/Progress Report

ACTION: APPROVED

APPROVAL DATE: December 10, 2014

EXPIRATION DATE: January 16, 2016

REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 8 (a) (c)

Thank you for your submission of Continuing Review/Progress Report materials for this project. The University of Maryland College Park (UMCP) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

Prior to submission to the IRB Office, this project received scientific review from the departmental IRB Liaison.

This submission has received Expedited Review based on the applicable federal regulations.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Unless a consent waiver or alteration has been approved, Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of January 16, 2016.

Please note that all research records must be retained for a minimum of seven years after the completion of the project.

If you have any questions, please contact the IRB Office at 301-405-4212 or irb@umd.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Maryland College Park (UMCP) IRB's records.

APPENDIX B: IRB-APPROVED DATA COLLECTION INSTRUMENTS

Guiding Questions for Protocol Development: District Administrator Interviews

General Questions About Program

- What are the goals of [program name]?
- How many people participate in [program name]?
 - Building administrators (principals, assistant principals, other school administrators)?
 - Teachers
 - Other staff in schools
- How is [program name] structured? What does [program name] look like?
 - Does [program name] offer professional development? If so, what types of professional development?
 - Does [program name] have an administrator or teacher leadership component? If so, how does that leadership program work?
 - Does [program name] use a standards-based evaluation system for teachers? For building administrators? If so, how does that evaluation system work?
 - Does [program name] tie payouts to student performance? If so, how?
 - Does [program name] include a hard-to-staff component? If so, how does that work?
- How do payouts work in [program name]?
 - What do program participants receive payouts for in [program name]?
 - Are awards directed to individual participants? To groups/grades/schools?
 - What are the maximum payout amounts for each of these categories?
 - What is the total amount of payouts [program name] issued in one program year? How does this total break down by program component?
 - Who provides the money for the payouts?
- Who covers the costs of [program name]? Does some of this shift over time? (*Try to get at all sources, percentages, and changes of cost distribution over time.*)
 - Federal government. Percent covered: _____
 - State. Percent covered: _____
 - District. Percent covered: _____
 - School. Percent covered: _____
 - Private organization. Percent covered: _____
 - Other. Percent covered: _____

Program Administration

- How many staff members (FTE) work in the [program name] office?

- Do any of the staff members in the [program name] office split their time with other offices?
 - If so, how many, and what percentage of their time is devoted to [program name]?
- Who covers the salaries for the members of this office?
- What are the key roles and responsibilities of your office? How do you manage these roles and responsibilities?
 - Program recruitment?
 - Program implementation (and implementation of various components of program)?
 - Data management?
 - Calculation/delivery of payouts?
 - Other?
- In any given year, how much time do you (or members of your office) spend:
 - Recruiting participants for [program name]?
 - Calculating payouts for [program name]?
 - Coordinating and/or providing professional development for [program name]?
 - Communicating with the Department of Education?
 - Other?
- In any given week, how much time do you (or members of your office) spend:
 - Communicating with participants regarding questions about [program name]?
 - *(If applicable)* Communicating with the program developers?
 - Traveling to schools to help implement [program name]?
 - Managing data associated with [program name]?
 - Other?
- What sorts of physical materials (e.g., office space, office machines, office equipment, electronic hardware, electronic software, other) do you and the other members of your office need to perform your job? *For each resource, make sure to cover:*
 - How many/much of the resource devoted to program?
 - In the case of materials, can you use them for more than one year?
 - Who covers the cost of these resources/materials?
- Do you need to travel for your job?
 - If so, what is the purpose of this travel?
 - Where do you travel?
 - How often do you travel?
 - How long are the trips?
 - Who covers the cost?

Standards-Based Evaluation, Job Redesign, and Professional Development

- What role, if any, do you have in facilitating the administration of the standards-based evaluation tool for teachers and administrators?
 - How much time does this take?
 - What kinds of materials do you need?
 - How much of those materials do you need?
 - Can you reuse any of those materials across multiple years?
- (*If applicable*) What role, if any, do you have in making the leadership component work well?
 - How much time does this take?
 - What kinds of materials do you need?
 - How much of those materials do you need?
 - Can you reuse any of those materials in multiple years?
- Above, you told me a bit about your role in coordinating/providing professional development for [program name]. Are there any other professional development tasks that you do?
 - How much time does this take?
 - What kinds of materials do you need?
 - How much of those materials do you need?
 - Can you reuse any of those materials across multiple years?

Grant and Program Development

- What was the process for writing the TIF grant?
 - Who was involved in that decision-making process?
 - (*try to uncover*) Types of people?
 - (*try to uncover*) Number of people?
 - How much time did that process take?
- (*If program was developed externally*) [District] uses the [externally developed program] model. How did you choose to use that program model?
 - Who was involved in that decision-making process?
 - (*try to uncover*) Types of people?
 - (*try to uncover*) Number of people?
 - How much time did that process take?
 - Did you have to pay [program developer] to use the model? If so, how much did you have to pay?
- (*If program was developed internally*) How did [district] create [program name]?
 - What did that process look like?
 - Who was involved in that process?
 - (*try to uncover*) Types of people?
 - (*try to uncover*) Number of people?

- How much time did that process take?
 - Time on program creation outside of committee work?
 - Time on meetings?
 - Other?
- How did you start to implement the program and deal with:
 - Phasing in the program?
 - Developing the infrastructure (data management, evaluation instruments, performance assessments, etc.) to manage the program?
 - Training people to participate in the program?
 - Evaluating/revising program design?
- For all of the early implementation activities we just discussed,
 - What types of people and how many people were involved?
 - How much time did it take?
 - What materials did you need?

Program Evaluation

- How do you plan to evaluate [program name]?
 - Internal evaluation?
 - How many people work on that?
 - How long does it take?
 - External evaluation/contract?
 - How much do you have to pay for that?
 - Formative evaluation?
 - Summative evaluation?

Guiding Questions for Protocol Development: School Administrator Interviews

Program Administration

- What, if any administrative activities do you engage in so that you can participate in [program name]?
- What, if any, administrative activities do you engage in so that your employees (teachers or other staff) can participate in [program name]?
- How many people in your school participate in [program name]?

Standards-Based Evaluation

- *(If necessary)* Can you describe the process through which your performance is evaluated?
 - What are the steps in the process?
 - Who is involved in the process?
 - What activities do you have to complete in order to finish the process?
 - How long does the process take?
 - What, if any, materials do you use to complete the process? (e.g., training manuals, data management spreadsheets or software, etc.) How many/much of these materials do you need?
 - Do you get paid extra to do this? (If so, who pays for that? District? Grant? Other?)
 - What is your reaction to this process? *(If applicable, use follow-up questions to get at human cost information)*
- Can you describe the process through which you evaluate your staff's (teachers or other) performance?
 - Did you have to undergo any training to complete this process? If so, can you explain that process? (Location, duration, etc.)
 - What are the steps in the process?
 - Who is involved in the process?
 - What activities do you have to complete in order to finish the process?
 - How long does the process take?
 - What, if any, materials do you use to complete the process? (e.g., training manuals, data management spreadsheets or software, etc.) How many/much of these materials do you need?
 - Do you get paid extra to do this? (If so, who pays for that? District? Grant? Other?)
 - What is your reaction to this process? *(If applicable, use follow-up questions to get at human cost information)*

Job Redesign

- Does [program name] involve a leadership component for administrators? If so, are you participating in that part of the program? If so, can you describe that process?

- Required time? How much? Do you get paid extra to do the leadership work?
 - Required materials? How many/much? Who provides the materials?
- Are there any activities you do in order to allow the teachers in your school to participate in the leadership associated with [program name]?
 - Required time? How much? Do you get paid extra to oversee these leadership activities?
 - Required materials? How many/much? Who provides the materials?
- What is your reaction to this process? *(If applicable, use follow-up questions to get at human cost information)*

Professional Development

- What types of administrator professional development are associated with [program name]?
 - Can you describe the process?
 - Who is involved?
 - Required time? How much?
 - Required materials? How many/much?
 - Required travel?
 - Do you receive compensation for any of the time you spend on professional development?
 - What is your reaction to this professional development? *(If applicable, use follow-up questions to get at human cost information)*
- Are there any activities you do in order to allow teachers in your school to participate in [program name]'s professional development component?
 - Required time? How much? Do you get paid extra for this?
 - Required materials? How many/much? Who provides these materials?
 - What is your reaction to this professional development? *(If applicable, use follow-up questions to get at human cost information)*

Other Program Components

- Do you have to do anything for the [program's name for measure used to link student scores to educator payout]?
 - If so, how much time/materials does that take?
 - What is your reaction to this program component? *(If applicable, use follow-up questions to get at human cost information)*
- *(If applicable)* Do you have to do anything for [program's name for hard-to-staff component]?
 - If so, how much time/materials does that take?
 - What is your reaction to this program component? *(If applicable, use follow-up questions to get at human cost information)*

Guiding Questions for Protocol Development: Teacher Focus Groups

Standards-Based Evaluation

Can you describe the process through which you undergo a standards-based evaluation?

- Did you have to undergo any training to participate this evaluation process? If so, can you explain that process? (Location, duration, etc.)
- What are the steps in the process?
- Who is involved in the process?
- What activities do you have to complete in order to finish the process?
- How long does the process take? Do you get paid extra to go to the meetings/trainings (different than getting paid for a high evaluation)?
- What, if any, materials do you use to complete the process? (e.g., training manuals, data management spreadsheets or software, etc.) How many/much materials do you need? Who provides the materials?
- What is your reaction to this process? (*If applicable, use follow-up questions to get at human cost information*)

Job Redesign

- Do you participate in [program name]'s leadership component? If so, what does that process look like?
 - Who is involved?
 - What sorts of activities do you perform?
 - How long does the process take?
 - What materials do you use to complete the process? How many/much? Who provides the materials?
 - How do you get paid for this work?
 - What is your reaction to this leadership component? (*If applicable, use follow-up questions to get at human cost information*)
- Regardless of whether you personally participate in [program name]'s leadership component, do you participate in activities that help any of your colleagues advance on a career ladder?
 - Who is involved?
 - What sorts of activities do you perform?
 - How long does the process take?
 - What materials do you use to complete the process? How many/much? Who provides the materials?
 - Do you get paid extra to participate in your colleagues' work?
 - What is your reaction to this leadership component? (*If applicable, use follow-up questions to get at human cost information*)

Professional Development

What types of professional development are associated with [program name]?

- Can you describe the process?
- Who is involved?
- Required time? How much?
- Required materials? How many/much? Who provides them?
- Required travel?
- Do you receive compensation for any of the time you spend on professional development?
- What is your reaction to this professional development? *(If applicable, use follow-up questions to get at human cost information)*

Other Program Components

- Do you have to do anything for the [program's name for measure used to link student scores to educator payout]?
 - If so, how much time/materials does that take?
 - What is your reaction to this program component? *(If applicable, use follow-up questions to get at human cost information)*
- *(If applicable)* Do you have to do anything for [program's name for hard-to-staff component]?
 - If so, how much time/materials does that take?
 - What is your reaction to this program component? *(If applicable, use follow-up questions to get at human cost information)*

Guiding Questions for Protocol Development: External Program Developer

- Can you describe your interaction with the people who implement [program name] in [program location]?
 - Telecommunication?
 - In person communication?
 - In person training/professional development?
 - How much time do you spend on these activities?
- What sorts of assistance, if any, do you provide to people with [program name]? How much time do you spend on these activities?

Guiding Questions for Protocol Development: Staff Member in U.S. Department of Education TIF Office

Overseeing the TIF Program

- Can you describe the roles and responsibilities of the TIF Office?
- Can you describe your roles and responsibilities within the TIF Office?
- What sorts of information do you gather from the TIF grantees?
- What sorts of activities do you and your colleagues complete in order to administer the program? What resources are required (time, physical materials, physical space, and so forth) do you use to administer the program? How many/much?

Interacting with Particular Program Implementers (*if applicable*)

- Can you describe your interaction with the people who implement [program name] in [program location]?
 - Telecommunication?
 - In person communication?
 - In person training/professional development?
 - How much time do you spend on these activities?
- What sorts of assistance, if any, do you provide to people with [program name]? How much time do you spend on these activities?

Interview/Focus Group Worksheet

Note: I will pass out this worksheet to study participants at the beginning of the conversations. The purpose of this worksheet is to help study participants begin to think about their interaction with the educator incentive program in terms of resource investment. I will tailor the worksheet to the particular programs in which the participant is enrolled, and I will include as many sections as needed (e.g., for standards-based evaluation components, professional development components, and so forth). All sections will follow the format below.

Thank you for participating in this study! Before we begin the conversation, please take a moment to jot down some responses to the following questions about [program name].

Think about what you have to do for [program component].

- How much time does it take you to do these things?
- Do you need any materials for these things? If so, how many?

Think about what you have to do for [program component].

- How much time does it take you to do these things?
- Do you need any materials? If so, how many?

Think about what you have to do for [program component].

- How much time does it take you to do these things?
- Do you need any materials? If so, how many?

APPENDIX C: IRB-APPROVED CONSENT FORMS
Consent Form for Federal and District Administrators

Project Title	<i>A Cost Analysis of Educator Incentive Programs Funded by the Teacher Incentive Fund (TIF)</i>
Purpose of the Study	<i>This research is being conducted by Jennifer King Rice and Kathleen Mulvaney Hoyer at the University of Maryland, College Park. We are inviting you to participate in this research project because you have experience with the resources required to implement an educator incentive program that is funded, in part, by the federal government's Teacher Incentive Fund (TIF). The purpose of this research project is to understand TIF-funded educator incentive programs, the range of costs associated with these programs, and the distribution of these costs across different parties (i.e., the district, the federal government, etc.).</i>
Procedures	<p><i>The procedures involve speaking with the researchers about the resources required to implement an educator incentive program. We may ask you to fill out a survey or a worksheet about program-related resources. We may ask to have an interview with you to talk about the costs associated with your educator incentive program. We may hold these interviews with you individually or in joint interviews with your colleague(s). Examples of questions in the surveys/interviews include:</i></p> <ul style="list-style-type: none"> • <i>What sorts of activities do you and your colleagues complete in order to administer the program?</i> • <i>What resources are required (time, physical materials, physical space, and so forth) do you use to administer the program?</i>
Potential Risks and Discomforts	<i>While the researchers will take steps to minimize the risk associated with loss of your confidentiality, there is a possible risk of identification due to the public nature of your position. However, potential participant identification comes with no known risks, because the researchers intend to gather information from you about the programs and their required investments (e.g, time, effort, money) instead of information about you (e.g., your feelings, your opinions on the desirability of the programs).</i>
Potential Benefits	<i>This research is not designed to help you personally. However, we hope that, in the future, other people might benefit from this study through improved understanding of the full range of resources required to implement educator incentive programs and the costs associated with those resources.</i>
Confidentiality	<p><i>Any potential loss of confidentiality will be minimized by storing data in a secure location such as a locked office/cabinet or on a password-protected device. Data will be filed under code names, not participants' real names.</i></p> <p><i>Your identity will be protected to the maximum extent possible in written products associated with this research. However, the public nature of your position may limit the confidentiality that this study can provide. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.</i></p>

Right to Withdraw and Questions	<p><i>Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.</i></p> <p><i>If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator(s):</i></p> <p style="text-align: center;">Jennifer King Rice 2110B Benjamin Building University of Maryland College Park, MD 20742 (301) 405-5580 jkr@umd.edu</p> <p style="text-align: center;">OR</p> <p style="text-align: center;">Kathleen Mulvaney Hoyer 2110A Benjamin Building University of Maryland College Park, MD 20742 (301) 405-4883 khoyer@umd.edu</p>	
Participant Rights	<p><i>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</i></p> <p style="text-align: center;">University of Maryland College Park Institutional Review Board Office 1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678</p> <p><i>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</i></p>	
Statement of Consent	<p><i>Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You will receive a copy of this signed consent form.</i></p> <p><i>If you agree to participate, please sign your name below.</i></p>	
Signature and Date	NAME OF SUBJECT [Please Print]	
	SIGNATURE OF SUBJECT	
	DATE	

Consent Form for School Educators (Building Administrators, Teachers, and Other School Staff)

Project Title	<i>A Cost Analysis of Educator Incentive Programs Funded by the Teacher Incentive Fund (TIF)</i>
Purpose of the Study	<i>This research is being conducted by Jennifer King Rice and Kathleen Mulvaney Hoyer at the University of Maryland, College Park. We are inviting you to participate in this research project because you have experience with the resources required to implement an educator incentive program that is funded, in part, by the federal government's Teacher Incentive Fund (TIF). The purpose of this research project is to understand TIF-funded educator incentive programs, the range of costs associated with these programs, and the distribution of these costs across different parties (i.e., the district, the federal government, etc.).</i>
Procedures	<p><i>The procedures involve speaking with the researchers about the resources required to implement an educator incentive program. We may ask you to fill out a survey or a worksheet about program-related resources. We may ask to have an interview with you to talk about the costs associated with your educator incentive program. We may hold these interviews with you individually or in joint interviews with your colleague(s). Examples of questions in the surveys/interviews include:</i></p> <ul style="list-style-type: none"> <i>• How much time does it take to complete standards-based performance evaluations for participating educators?</i> <i>• What types of professional development are associated with the program? How much time does this professional development take?</i>
Potential Risks and Discomforts	<i>There are no known risks associated with participating in this research project.</i>
Potential Benefits	<i>This research is not designed to help you personally. However, we hope that, in the future, other people might benefit from this study through improved understanding of the full range of resources required to implement educator incentive programs and the costs associated with those resources.</i>
Confidentiality	<p><i>Any potential loss of confidentiality will be minimized by storing data in a secure location such as a locked office/cabinet or on a password-protected device. Data will be filed under code names, not participants' real names.</i></p> <p><i>Your identity will be protected to the maximum extent possible in written products associated with this research. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.</i></p>
Right to Withdraw	<i>Your participation in this research is completely voluntary. You may</i>

and Questions	<p><i>choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.</i></p> <p><i>If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator(s):</i></p> <p style="text-align: center;">Jennifer King Rice 2110B Benjamin Building University of Maryland College Park, MD 20742 (301) 405-5580 jkr@umd.edu</p> <p style="text-align: center;">OR</p> <p style="text-align: center;">Kathleen Mulvaney Hoyer 2110A Benjamin Building University of Maryland College Park, MD 20742 (301) 405-4883 khoyer@umd.edu</p>	
Participant Rights	<p><i>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</i></p> <p style="text-align: center;">University of Maryland College Park Institutional Review Board Office 1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678</p> <p><i>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</i></p>	
Statement of Consent	<p><i>Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You will receive a copy of this signed consent form.</i></p> <p><i>If you agree to participate, please sign your name below.</i></p>	
Signature and Date	NAME OF SUBJECT [Please Print]	
	SIGNATURE OF SUBJECT	
	DATE	

Consent Form for External Program Developers

Project Title	<i>A Cost Analysis of Educator Incentive Programs Funded by the Teacher Incentive Fund (TIF)</i>
Purpose of the Study	<i>This research is being conducted by Jennifer King Rice and Kathleen Mulvaney Hoyer at the University of Maryland, College Park. We are inviting you to participate in this research project because you have experience with the resources required to implement an educator incentive program that is funded, in part, by the federal government's Teacher Incentive Fund (TIF). The purpose of this research project is to understand TIF-funded educator incentive programs, the range of costs associated with these programs, and the distribution of these costs across different parties (i.e., the district, the federal government, etc.).</i>
Procedures	<p><i>The procedures involve speaking with the researchers about the resources required to implement an educator incentive program. We may ask you to fill out a survey or a worksheet about program-related resources. We may ask to have an interview with you to talk about the costs associated with your educator incentive program. We may hold these interviews with you individually or in joint interviews with your colleague(s). Examples of questions in the surveys/interviews include:</i></p> <ul style="list-style-type: none"> <i>• What sorts of assistance, if any, do you provide to people who implement your program model?</i> <i>• How much time do you spend on providing this assistance?</i>
Potential Risks and Discomforts	<i>There are no known risks associated with participating in this research project.</i>
Potential Benefits	<i>This research is not designed to help you personally. However, we hope that, in the future, other people might benefit from this study through improved understanding of the full range of resources required to implement educator incentive programs and the costs associated with those resources.</i>
Confidentiality	<p><i>Any potential loss of confidentiality will be minimized by storing data in a secure location such as a locked office/cabinet or on a password-protected device. Data will be filed under code names, not participants' real names.</i></p> <p><i>Your identity will be protected to the maximum extent possible in written products associated with this research. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.</i></p>
Right to Withdraw	<i>Your participation in this research is completely voluntary. You may</i>

and Questions	<p><i>choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.</i></p> <p><i>If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator(s):</i></p> <p style="text-align: center;">Jennifer King Rice 2110B Benjamin Building University of Maryland College Park, MD 20742 (301) 405-5580 jkr@umd.edu</p> <p style="text-align: center;">OR</p> <p style="text-align: center;">Kathleen Mulvaney Hoyer 2110A Benjamin Building University of Maryland College Park, MD 20742 (301) 405-4883 khoyer@umd.edu</p>	
Participant Rights	<p><i>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</i></p> <p style="text-align: center;">University of Maryland College Park Institutional Review Board Office 1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678</p> <p><i>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</i></p>	
Statement of Consent	<p><i>Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You will receive a copy of this signed consent form.</i></p> <p><i>If you agree to participate, please sign your name below.</i></p>	
Signature and Date	NAME OF SUBJECT [Please Print]	
	SIGNATURE OF SUBJECT	
	DATE	

APPENDIX D: DECISION RULE DOCUMENT AND DATA TEMPLATE NOTES

Notes that apply to all projects' templates:

- I tried whenever possible to report costs for 2012-13, the year for which I had payout data.
- Compensation includes both salary and benefits. I assume that benefits are 25 percent of the salary.
- When I noticed a conflict between information in an interview and information contained on a document (for instance, a budget), I used the information on the document, unless the respondent in the interview explicitly acknowledged the discrepancy and provided a reason that the oral response was the accurate number.
- For tangible equipment and materials, I annualized with a five percent interest rate and an estimate of a five-year life of the equipment.
- For office space, I assumed 200 square feet per employee and an additional 200 square feet for filing/storage space.
- I included an estimate for travel to 2 TIF meetings per year, due to the fact that travel to TIF meetings was more common in the early portion of the grant.
- For the distribution of costs, I divided payouts between TIF and the district based on the district's increasing share match requirements for 2012-13. I obtained the Year 3 required increasing shares from the APR. My estimates reflected what the grantee was required to contribute in matching shares, not necessarily what the grantee actually did contribute. The only deviations to this pattern were in cases where payouts went to employees who were not covered by the TIF grant language; in these cases, I allocated all of a payout share to the district. For year 3, the TAP project's matching share split was 83% TIF and 17% district; the JR project's matching share split was 95.7% TIF and 4.3% district; and the non-JR project's matching share split was 90% TIF and 10% district.
- On the standardized data templates, I used the district administrator hourly rate for advisory council members, regardless of whether they worked for the district or for another entity.
- I did not standardize the costs of substitute teachers; differences in the ways that districts reported costs for substitute teachers made it difficult to determine an appropriate standardized value for these personnel.
- Asterisks in the distribution section of the data templates indicate a potential split of costs between districts and educators themselves; the exact distribution of costs

between districts and educators depends on the extent to which educators performed work on their own time.

Notes that apply to the TAP project:

- A study participant noted that project administration required travel to school sites, but budget documents did not provide an estimated cost for this resource. For travel to sites for implementation assistance in for the TAP project, I used the value for travel for one administrator listed on budget materials for another study site and multiplied that value by the number of administrators in the TAP project.
- I calculated responsibility for formal teacher evaluations in the TAP project in the following manner: each teacher received four observations per year, and respondents indicated that the same evaluator did not conduct all four observations. I allocated one evaluation per teacher to a school principal, one evaluation to an assistant principal, one evaluation to a master teacher, and one evaluation to a mentor teacher. Two of the observations were announced (and therefore came with a pre-conference and work associated with the pre-conference), and two were unannounced. Because I assumed that different evaluators performed announced/unannounced observation for different teachers (so that each type of evaluator performed some announced and some unannounced observations throughout the course of the year), I split the time associated with the pre-conference (the meeting itself and preparations for it) in half. For the first announced observation, half of the time went to principals and half went to assistant principals; for the second announced, half of the time went to master teachers and half went to mentor teachers. Each teacher also has two summative conferences per year; for these summative conferences, I assumed that the assistant principal performed one and the principal performed the other.
- When I divided the number of teachers to evaluate among the number of administrators for a per-administrator estimate of evaluation workload, I included the number of master/mentor teachers in the overall number of teachers, since I assumed that master and mentor teachers also had to undergo teacher evaluations.
- For cost estimates for teachers doing work for their own evaluations, I used the hourly cost for career teachers (as opposed to masters and mentors).
- I assumed there were 129 master/mentor teachers in 2012-13. The FY2013-14 budget listed augmentations for 48 masters and 86 mentors, and the July 2013 APR noted the addition of 5 masters/mentors (3 masters and 2 mentors). Thus, the number of masters/mentors in 2012-13 (the study year) was $48+86-5=129$. Additionally, according to 2012-13 payout data, there were 45 school-level administrators, so the total number of TAP Leadership Team members in 2012-13 was 174.
- Expenditures were associated with all resources that TIF supported as well as clerical assistance for project implementation, district administrators' travel to school sites for

implementation assistance, and the district's share of payouts for standards-based evaluation, student achievement, and the educator retention bonus.

Notes that apply to the JR project:

- I assumed that all teachers make a physical portfolio of practice for their *Framework for Teaching* evaluations.
- For teacher evaluations: the teachers had two unannounced observations a year, and they also had one overall pre-meeting a year (this meeting was a post-reflection meeting rather than a pre-observation conference). I split the observations (and associated work/meetings) between principals and assistant principals, and I allocated the time to have the overall pre-meeting to principals.
- Expenditures were associated with all resources that TIF supported as well as the district administrator's travel to job recruitment fairs, materials for school culture activities and for educators' portfolios of practice, and the district's share of payouts for effectiveness, school culture, attendance, district achievement, professional development, leadership, teacher-led professional development, and curriculum projects.

Notes that apply to the non-JR project:

- Project administration required travel to school sites, but budget documents did not provide an estimated cost for this resource. For travel to sites for implementation assistance in the non-JR project, I used the value listed on budget materials for another site.
- I assumed that half of the teachers made a physical portfolio of practice (since respondents indicated that some of them make electronic portfolios).
- I split the cost of the data management/professional development software between project administration and professional development, since the district used the software for both purposes.
- There may have been more costs to administrators for providing professional development to their teachers than is listed on the template. Administrators were not required by the project to provide professional development to teachers, but some administrators may have chosen to do so.
- Expenditures were associated with all resources that TIF supported as well as the data management/professional development software, travel to sites for implementation assistance, and the district's share of payouts for standards-based evaluation, student achievement, student behavior/attendance, and educator retention.

APPENDIX E: STANDARDIZED DATA TEMPLATES

TAP Project Standardized Data Template: Magnitude of Project Costs										
			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
Project components	Ingredients	Notes	Number of hours in task	Number of people performing task	Annualization Factor	Period	Amount of resource (or amount of tasks per person, for tasks with hourly computation)	Unit Value of Resource	Total Annual Cost (dollars)	Total Annual Cost (Hours)
Project Administration										
Personnel	Project director	full-time					1	113338	113338	
	District administrator 2	full-time					1	113338	113338	
	District administrator 3	part-time					0.8	113338	90670	
	Clerical support	part-time					0.5	47813	23906	
	External project developer (project lead)	provides on-site technical assistance					1	3750	3750	
	External project developer (implementation evaluator)	evaluates fidelity of project implementation					1	14000	14000	
	Advisory council	3 additional people from project developer; 2 additional people from district; 2 people from community	2	6			1	54	652	
Facilities	Project office space						900	22	19737	
Materials/Equipment/Supplies	Data management system						1	28000	28000	
	Office supplies						1	500	500	
	Computer				0.23		2	1006	465	
	Laptop				0.23		3	811	562	
	Tablet				0.23		3	640	444	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Number of hours in task</i>	<i>Number of people performing task</i>	<i>Annualization Factor</i>	<i>Period</i>	<i>Amount of resource (or amount of tasks per person, for tasks with hourly computation)</i>	<i>Unit Value of Resource</i>	<i>Total Annual Cost (dollars)</i>	<i>Total Annual Cost (Hours)</i>
<i>Travel/transportation</i>	Travel for training/meetings - ED/TIF	2 TIF meetings; 3 night trip		2			2	1420	5680	
	Travel to sites for implementation assistance						3	1000	3000	
	Travel to other TAP sites	for training/observation of project implementation (district personnel); 3 night trip		3			1	1420	4260	
	Travel to other TAP sites	for training/observation of project implementation (educators); 2 night trip		7			2	1165	16310	
Demonstrated Performance										
Standards-Based Evaluation										
<i>Personnel</i>	District administrator (principal supervisor)	evaluates administrators on state tool	41.5	1			14	64	37129	
	School principals	first-year training on teacher evaluation	28.8	14		0.2	1	62	5030	
	School assistant principals	first-year training on teacher evaluation	28.8	31		0.2	1	54	9712	
	School principals	performing work for own TAP evaluation	3	14			1	62	2620	
	School assistant principals	performing work for own TAP evaluation	3	31			1	54	5058	
	School principals	performing work for own state evaluation	43	14			1	62	37554	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Number of hours in task</i>	<i>Number of people performing task</i>	<i>Annualization Factor</i>	<i>Period</i>	<i>Amount of resource (or amount of tasks per person, for tasks with hourly computation)</i>	<i>Unit Value of Resource</i>	<i>Total Annual Cost (dollars)</i>	<i>Total Annual Cost (Hours)</i>
<i>Personnel (continued)</i>	School assistant principals	performing work for own state evaluation	43	31			1	54	72503	
	School principal	evaluating assistant principal on state evaluation	41.5	14			2	62	80254	
	School principal	performing one teacher observation and related activities	11	14			16	62	155033	
	School assistant principal	performing one teacher observation and related activities	11	31			16	54	299313	
	Teacher	performing work for own evaluation	2.25	702			4	46	292950	
	Teacher	filling out administrator survey	0.25	702			1	46	8138	
<i>Materials/Equipment/Supplies</i>	Teacher Toolkit	evaluation manual					865	36	31140	
	Tablet	for members of TAP Leadership Teams			0.23		174	640	25730	
	Observer app for tablet	to assist with teacher observations			0.23		174	55	2210	
<i>Other inputs</i>	Standards-based evaluation payouts						1	936218	936218	
<i>Student Achievement</i>										
<i>Other inputs</i>	Student achievement payouts						1	815185	815185	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Number of hours in task</i>	<i>Number of people performing task</i>	<i>Annualization Factor</i>	<i>Period</i>	<i>Amount of resource (or amount of tasks per person, for tasks with hourly computation)</i>	<i>Unit Value of Resource</i>	<i>Total Annual Cost (dollars)</i>	<i>Total Annual Cost (Hours)</i>
Investments in or Extensions of Practice										
Professional Development Activities										
<i>Personnel</i>	School principals	first-year training on project implementation (besides teacher evaluations)	43.2	14		0.2	1	62	7546	
<i>Personnel (continued)</i>	School assistant principals	first-year training on project implementation (besides teacher evaluations)	43.2	31		0.2	1	54	14568	
	School principals	ongoing PD on project implementation	24	14			1	62	20960	
	School assistant principals	ongoing PD on project implementation	24	31			1	54	40467	
	School principals	planning project implementation for year	16	14			1	62	13973	
	School assistant principals	planning project implementation for year	16	31			1	54	26978	
	School principals	TLT meetings	90	14			1	62	78601	
	School assistant principals	TLT meetings	90	31			1	54	151750	
	Career teacher	cluster meetings	36	573			1	46	956471	
	Substitute teachers						1	55884	55884	
<i>Materials/Equipment/Supplies</i>	TAP portal	for teachers to access PD materials					1	14000	14000	
	NIET TAP training supplies	PD materials for TLT members					1	1562	1562	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Number of hours in task</i>	<i>Number of people performing task</i>	<i>Annualization Factor</i>	<i>Period</i>	<i>Amount of resource (or amount of tasks per person, for tasks with hourly computation)</i>	<i>Unit Value of Resource</i>	<i>Total Annual Cost (dollars)</i>	<i>Total Annual Cost (Hours)</i>
<i>Travel/transportation</i>	Summer Institute	3 night trip, plus conference registration		140			1	1820	254800	
	National Conference	3 night trip, plus conference registration		80			1	1820	145600	
Job Redesign Activities										
<i>Other inputs</i>	Payouts for master teachers						45	11000	495000	
	Payouts for mentor teachers						84	4500	378000	
Educator Distribution										
<i>Other inputs</i>	Payouts for recruitment/retention						1	123000	123000	
TOTAL COST									6033547	
TOTAL EXPENDITURES									3696551	
COST PER PARTICIPANT									8077	
EXPENDITURES PER PARTICIPANT									4949	

Note: This table shows rounded values. I used unrounded values in calculations for findings.

TAP Project Standardized Data Template: Distribution of Project Costs								
<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Federal (TIF)</i>	<i>District</i>	<i>External Agency</i>	<i>School Administrators</i>	<i>Teachers</i>	<i>Students</i>
Project Administration								
<i>Personnel</i>	Project director	full-time	113338					
	District administrator 2	full-time	113338					
	District administrator 3	part-time	90670					
	Clerical support	part-time		23906				
	External project developer (project lead)	provides on-site technical assistance	3750					
	External project developer (implementation evaluator)	evaluates fidelity of project implementation	14000					
	Advisory council	3 additional people from project developer; 2 additional people from district; 2 people from community		217	434			
<i>Facilities</i>	Project office space			19737				
<i>Materials/Equipment/Supplies</i>	Data management system		28000					
	Office supplies		500					
	Computer		465					
	Laptop		562					
	Tablet		444					
<i>Travel/transportation</i>	Travel for training/meetings - ED/TIF	2 TIF meetings; 3 night trip	5680					
	Travel to sites for implementation assistance			3000				
	Travel to other TAP sites	for training/observation of project implementation (district personnel); 3 night trip	4260					
	Travel to other TAP sites	for training/observation of project implementation (educators); 2 night trip	16310					
Demonstrated Performance								
Standards-Based Evaluation								
<i>Personnel</i>	District administrator (principal supervisor)	evaluates administrators on state tool		37129				

<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Federal (TIF)</i>	<i>District</i>	<i>External Agency</i>	<i>School Administrators</i>	<i>Teachers</i>	<i>Students</i>
<i>Personnel (continued)</i>	School principals	first-year training on teacher evaluation		5030		*		
	School assistant principals	first-year training on teacher evaluation		9712		*		
	School principals	performing work for own TAP evaluation		2620		*		
	School assistant principals	performing work for own TAP evaluation		5058		*		
	School principals	performing work for own state evaluation		37554		*		
	School assistant principals	performing work for own state evaluation		72503		*		
	School principal	evaluating assistant principal on state evaluation		80254		*		
	School principal	performing one teacher observation and related activities		155033		*		
	School assistant principal	performing one teacher observation and related activities		299313		*		
	Teacher	performing work for own evaluation		292951			*	
	Teacher	filling out administrator survey		8138			*	
<i>Materials/Equipment/Supplies</i>	Teacher Toolkit	evaluation manual	31140					
	Tablet	for members of TAP Leadership Teams	25730					
	Observer app for tablet	to assist with teacher observations	2210					
<i>Other inputs</i>	Standards-based evaluation payouts		777061	159157				
<i>Student Achievement</i>								
<i>Other inputs</i>	Student achievement payouts		676604	138582				
Investments in or Extensions of Practice								
Professional Development Activities								
<i>Personnel</i>	School principals	first-year training on project implementation (besides teacher evaluations)		7546		*		
	School assistant principals	first-year training on project implementation (besides teacher evaluations)		14568		*		

<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Federal (TIF)</i>	<i>District</i>	<i>External Agency</i>	<i>School Administrators</i>	<i>Teachers</i>	<i>Students</i>
<i>Personnel (continued)</i>	School principals	ongoing PD on project implementation		20960		*		
	School assistant principals	ongoing PD on project implementation		40467		*		
	School principals	planning project implementation for year		13973		*		
	School assistant principals	planning project implementation for year		26978		*		
	School principals	TLT meetings		78601		*		
	School assistant principals	TLT meetings		151750		*		
	Career teacher	cluster meetings		956471			*	
	Substitute teachers		55884					
<i>Materials/Equipment/Supplies</i>	TAP portal	for teachers to access PD materials	14000					
	NIET TAP training supplies	PD materials for TLT members	1562					
<i>Travel/transportation</i>	Summer Institute	3 night trip, plus conference registration	254800					
	National Conference	3 night trip, plus conference registration	145600					
<i>Job Redesign Activities</i>								
<i>Other inputs</i>	Payouts for master teachers		495000					
	Payouts for mentor teachers		378000					
Educator Distribution								
<i>Other inputs</i>	Payouts for recruitment/retention		102090	20910				
TOTAL COST			3350996	2682117	434	*	*	0
TOTAL EXPENDITURES			3350996	345555	0	0	0	0

*Due to data limitations, it is not clear how much of these costs were borne by the district and how much of these costs were borne by personnel within them. While I have recorded these costs in the "district" column, it is likely that some portion of the costs are borne by the staff themselves (i.e., through uncompensated time).

Note: This table shows rounded values. I used unrounded values in calculations for findings.

JR Project Standardized Data Template: Cost Magnitude										
			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
Project components	Ingredients	Notes	Number of hours in task	Number of people performing tasks	Annualization Factor	Period	Amount of resource (or amount of tasks per person, for tasks with hourly computation)	Unit Value of Resource	Total Annual Cost (Dollars)	Total Annual Cost (Hours)
Project Administration										
Personnel	Project director	full-time					1	113338	113338	
	Clerical staff	part-time					0.14	47813	6694	
	Additional summer clerical staff	part-time	160	1			1	7.25	1160	
	Advisory Council	community leaders; sustainability planning	3	6			1	54	978	
Facilities	Project office space						600	21.93	13158	
Materials/Equipment/Supplies	Data management system						1	40000	40000	
	Computer				0.23		1	1006	232	
	Laptop				0.23		1	811	187	
	Office supplies						1	1500	1500	
Travel/transportation	Travel for training/meetings	2 TIF meetings; 3 night trip		2			2	1420	5680	
	Travel to schools: implementation assistance						1	1000	1000	
	Travel to job fairs for recruitment efforts						1	15000	15000	
Demonstrated Performance										
Standards-Based Evaluation										
Personnel	District superintendent	evaluating principals' portfolios	2	1			6	100	1206	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Number of hours in task</i>	<i>Number of people performing tasks</i>	<i>Annualization Factor</i>	<i>Period</i>	<i>Amount of resource (or amount of tasks per person, for tasks with hourly computation)</i>	<i>Unit Value of Resource</i>	<i>Total Annual Cost (Dollars)</i>	<i>Total Annual Cost (Hours)</i>
<i>Personnel (continued)</i>	Initial training by Danielson consultants	first-year FFT training				0.2	1	5000	1000	
	Consultant from Discovery Education	first year VAL-ED training				0.2	1	20000	4000	
	School principals	first-year FFT training	64	6		0.2	1	62	4791	
	School assistant principals	first-year FFT training	64	8		0.2	1	54	5570	
	School principals	ongoing PD on the FFT	45	6			1	62	16843	
	School assistant principals	ongoing PD on the FFT	45	8			1	54	19581	
	School principals	state portfolio creation time	20	6			1	62	7486	
	School assistant principals	state portfolio creation time	20	8			1	54	8702	
	School principals	state portfolio meetings	2	6			1	62	749	
	School assistant principals	state portfolio meetings	2	8			1	54	870	
	School principals	meet with AP about state portfolio	2	6			1	62	998	
	School principals	filling out own VAL-ED survey	1	6			1	62	374	
	School principals	conducting one teacher observation and related activities	3.5	6			30	62	39675	
	School assistant principals	conducting one teacher observation and related activities	3.5	8			30	54	46123	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Number of hours in task</i>	<i>Number of people performing tasks</i>	<i>Annualization Factor</i>	<i>Period</i>	<i>Amount of resource (or amount of tasks per person, for tasks with hourly computation)</i>	<i>Unit Value of Resource</i>	<i>Total Annual Cost (Dollars)</i>	<i>Total Annual Cost (Hours)</i>
<i>Personnel (continued)</i>	Teachers	doing work for own observation	2	212			2	46	39320	
	Teachers	making FFT portfolio	24	212			1	46	235918	
	Teachers	filling out admin. evaluation surveys	0.67	212			1	46	6586	
	External consultant	reviewing administrators' and teachers' portfolios					1	37500	37500	
<i>Materials/Equipment/Supplies</i>	Sheet protectors, paper, ink, binder	for administrators' portfolios					14	100	1400	
	Sheet protectors, paper, ink, binder	for teachers' portfolios					212	100	21200	
	Danielson book - ASCD Action tool	one for each school			0.23		6	67	93	
	Danielson book - Framework for Teaching, 2nd ed.	one for each admin/teacher			0.23		226	31	1615	
	VAL-ED surveys						6	360	2160	
<i>Student Achievement</i>										
<i>Other inputs</i>	Payouts - District achievement						1	8400	8400	
<i>Standards-Based Evaluation and Student Achievement Component (Combined)</i>										
<i>Other inputs</i>	Payouts for effectiveness	school administrators, teachers					1	175821	175821	
<i>School Culture Activities</i>										
<i>Personnel</i>	School administrators	planning events for staff	2	6			2	62	1497	
	Teacher	planning events for students	3	12			4	46	6677	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
Project components	Ingredients	Notes	Number of hours in task	Number of people performing tasks	Annualization Factor	Period	Amount of resource (or amount of tasks per person, for tasks with hourly computation)	Unit Value of Resource	Total Annual Cost (Dollars)	Total Annual Cost (Hours)
Personnel (continued)	Student	filling out school climate surveys	0.25	2887			1	-	0	722
Materials/Equipment/Supplies	Materials for school culture activities						6	500	3000	
Other inputs	Payouts - School culture						1	85800	85800	
Investments in or Extensions of Practice										
Attendance Component										
Other inputs	Payouts - Attendance						1	92625	92625	
Professional Development Activities										
Personnel	Substitute teachers						1	5440	5440	
Materials/Equipment/Supplies	Contract with Teachscape	PD materials					1	77444	77444	
	Contract with Mindsteps (and other programs)	training for administrators and master/mentor teachers					1	47683	47683	
	Contract with Simple K-12	PD materials					1	12000	12000	
	Contract with Educational Impact	PD materials					1	34000	34000	
Other inputs	Payouts - PD attended						1	100426	100426	
Job Redesign Activities										
Materials/Equipment/Supplies	Laptop for master teacher				0.23		3	811	562	
	Tablet for master teacher				0.23		3	640	444	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
Project components	Ingredients	Notes	Number of hours in task	Number of people performing tasks	Annualization Factor	Period	Amount of resource (or amount of tasks per person, for tasks with hourly computation)	Unit Value of Resource	Total Annual Cost (Dollars)	Total Annual Cost (Hours)
Materials/Equipment/Supplies (continued)	Document camera for master teacher				0.23		3	426	295	
	Projector for master teacher				0.23		3	426	295	
Travel/transportation	Travel for masters/coaches to attend conferences	3 night plus conference fee		26			1	1820	47320	
Other inputs	Payouts for master teacher						3	3000	9000	
	Payouts for peer coaches						20	1300	26000	
Job Expansion Activities										
Personnel	Site team leaders (teach.)	documentation/recordkeeping	36	6			1	46	10015	
	Site team members (teach)	program planning	27	36			1	46	45069	
Other inputs	Payouts - Leadership						1	66958	66958	
	Payouts - Teacher-led PD						1	1451	1451	
	Payouts – Curr. Project						1	14450	14450	
TOTAL COST									1575359	722
TOTAL EXPENDITURES									1063173	
COST PER PARTICIPANT									4246	
EXPENDITURES PER PARTICIPANT									2866	

Note: This table shows rounded values. I used unrounded values in calculations for findings.

JR Project Standardized Data Template: Cost Distribution								
<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Federal (TIF)</i>	<i>District</i>	<i>External Agency</i>	<i>School Administrators</i>	<i>Teachers</i>	<i>Students</i>
Project Administration								
<i>Personnel</i>	Project director	full-time	113338					
	Clerical staff	part-time	6694					
	Additional summer clerical staff	part-time	1160					
	Advisory Council	community leaders; sustainability planning			978			
<i>Facilities</i>	Project office space			13158				
<i>Materials/Equipment/Supplies</i>	Data management system		40000					
	Computer		232					
	Laptop		187					
	Office supplies		1500					
<i>Travel/transportation</i>	Travel for training/meetings	2 TIF meetings; 3 night trip	5680					
	Travel to school sites for implementation assistance		1000					
	Travel to job fairs for recruitment efforts			15000				
Demonstrated Performance								
Standards-Based Evaluation								
<i>Personnel</i>	District superintendent	evaluating principals' portfolios		1206				
	Initial training by Danielson consultants	first-year FFT training	1000					
	Consultant from Discovery Education	first year VAL-ED training	4000					
	School principals	first-year FFT training		4791		*		
	School assistant principals	first-year FFT training		5570		*		
	School principals	ongoing PD on the FFT		16843		*		
	School assistant principals	ongoing PD on the FFT		19581		*		
	School principals	state portfolio creation time		7486		*		
	School assistant principals	state portfolio creation time		8702		*		
	School principals	state portfolio meetings		749		*		
	School assistant principals	state portfolio meetings		870		*		
	School principals	meet with AP about state portfolio		998		*		
	School principals	filling out own VAL-ED survey		374		*		

<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Federal (TIF)</i>	<i>District</i>	<i>External Agency</i>	<i>School Administrators</i>	<i>Teachers</i>	<i>Students</i>
<i>Personnel (continued)</i>	School principals	conducting one teacher observation and related activities		39675		*		
	School assistant principals	conducting one teacher observation and related activities		46123		*		
	Teachers	doing work for own observation		39320			*	
	Teachers	making FFT portfolio		235918			*	
	Teachers	filling out admin. evaluation surveys		6586			*	
	External consultant	reviewing administrators' and teachers' portfolios	37500					
<i>Materials/Equipment/Supplies</i>	Sheet protectors, paper, ink, binder	for administrators' portfolios				1400		
	Sheet protectors, paper, ink, binder	for teachers' portfolios					21200	
	Danielson book - ASCD Action tool	one for each school	93					
	Danielson book - Framework for Teaching, 2nd ed.	one for each admin/teacher	1615					
	VAL-ED surveys		2160					
Student Achievement								
<i>Other inputs</i>	Payouts - District achievement			8400				
Standards-Based Evaluation and Student Achievement Component (Combined)								
<i>Other inputs</i>	Payouts for effectiveness	school administrators, teachers	168261	7560				
School Culture Activities								
<i>Personnel</i>	School administrators	planning events for staff		1497		*		
	Teacher	planning events for students		6677			*	
	Student	filling out school climate surveys						722
<i>Materials/Equipment/Supplies</i>	Materials for school culture activities			3000				
<i>Other inputs</i>	Payouts - School culture		82112	3689				
Investments in or Extensions of Practice								
Attendance Component								
<i>Other inputs</i>	Payouts - Attendance		74500	18125				
Professional Development Activities								
<i>Personnel</i>	Substitute teachers		5440					
<i>Materials/Equipment/Supplies</i>	Contract with Teachscape	PD materials	77444					
	Contract with Mindsteps (and other programs)	training for administrators and master/mentor teachers	47683					
	Contract with Simple K-12	PD materials	12000					

<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Federal (TIF)</i>	<i>District</i>	<i>External Agency</i>	<i>School Administrators</i>	<i>Teachers</i>	<i>Students</i>
<i>Materials/Equipment/Supplies (continued)</i>	Contract with Educational Impact	PD materials	34000					
<i>Other inputs</i>	Payouts - PD attended		96107	4318				
<i>Job Redesign Activities</i>								
<i>Materials/Equipment/Supplies</i>	Laptop for master teacher		562					
	Tablet for master teacher		444					
	Document camera for master teacher		295					
	Projector for master teacher		295					
<i>Travel/transportation</i>	Travel for master/mentor teachers to attend conference	3 night plus conference fee	47320					
<i>Other inputs</i>	Payouts for master teacher		9000					
	Payouts for peer coach (mentor teacher)		26000					
<i>Job Expansion Activities</i>								
<i>Personnel</i>	Site team leaders (teachers)	documentation/recordkeeping		10015			*	
	Site team members (teachers)	program planning		45069			*	
<i>Other inputs</i>	Payouts - Leadership		64079	2879				
	Payouts - Teacher-led PD		1389	62				
	Payouts - Curriculum project		13829	621				
<i>TOTAL COST</i>			976917	574864	978	1400*	21200*	722
<i>TOTAL EXPENDITURES</i>			976917	63656	0	1400	21200	0

*Due to data limitations, it is not clear how much of these costs were borne by the district and how much of these costs were borne by personnel within them. While I have recorded these costs in the "district" column, it is likely that some portion of the costs are borne by the staff themselves (i.e., through uncompensated time).

Note: This table shows rounded values. I used unrounded values in calculations for findings.

Non-JR Project Standardized Data Template: Magnitude										
			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
Project components	Ingredients	Notes	Number of hours in task	Number of people performing tasks	Annualization Factor	Period	Amount of resource (or amount of tasks per person, for tasks with hourly computation)	Unit Value of Resource	Total Annual Cost (dollars)	Total Annual Cost (Hours)
Project Administration										
Personnel	Project administrator	full-time					1	113338	113338	
	Planning Team I	1 additional district admin. and 1 external agency person	18	2			1	54	1955	
	Planning Team II	3 district administrators	9	3			1	54	1466	
	Planning Team II	principals	9	5			1	62	2807	
Facilities	Project office space						400	22	8772	
Materials/Equipment/Supplies	Data management software	Also used for PD; other half of cost below				0.33	0.11	195728	7092	
	Office supplies						1	500	500	
	Computer				0.23		1	1006	232	
	Laptop				0.23		1	811	187	
	Tablet				0.23		1	640	148	
Travel/transportation	Travel for training/meetings - ED/TIF	2 TIF meetings; 3 nights		2			2	1420	5680	
	Travel to schools for implementation assistance						1	1000	1000	
Demonstrated Performance										
Standards-Based Evaluation										
Personnel	District associate superintendent	performing administrator evaluations	9	1			14	86	10790	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
Project components	Ingredients	Notes	Number of hours in task	Number of people performing tasks	Annualization Factor	Period	Amount of resource (or amount of tasks per person, for tasks with hourly computation)	Unit Value of Resource	Total Annual Cost (dollars)	Total Annual Cost (Hours)
Personnel (continued)	Consultants for initial evaluation training					0.2	1	26485	5297	
	School principals	first-year training on the FFT	16	5		0.2	1	62	998	
	School assistant principals	first-year training on the FFT	16	9		0.2	1	54	1566	
	School principals	performing work for own evaluation	13	5			1	62	4055	
	School assistant principals	performing work for own evaluation	13	9			1	54	6364	
	School principals	performing work for one teacher observation and related activities	7	5			20	62	43979	
	School assistant principals	performing work for one teacher observation and related activities	7	9			20	54	69022	
	Teachers	performing work for informal peer observations	0.75	141			2	46	9807	
	Teachers	performing work for own formal evaluation	5	141			2	46	65378	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
Project components	Ingredients	Notes	Number of hours in task	Number of people performing tasks	Annualization Factor	Period	Amount of resource (or amount of tasks per person, for tasks with hourly computation)	Unit Value of Resource	Total Annual Cost (dollars)	Total Annual Cost (Hours)
Personnel (continued)	Teachers	performing work for own informal peer observation	0.25	141			2	46	3269	
	Teachers	performing work for own informal external observation	0.25	141			1	46	1634	
	Teachers	perform video self-reflection	1	141			2	46	13076	
	Teachers	create FFT portfolio	4	141			2	46	52303	
Materials/Equipment/Supplies	Danielson book - ASCD Action tool	one for each school			0.23		5	67	78	
	Danielson book - Framework for Teaching, 2nd ed.	one for each admin/teacher			0.23		155	31	1107	
	Tablet	for all administrators and teachers			0.23		155	640	22920	
	Materials -- binder, sheet protectors, ink, paper	for administrators' portfolios					14	100	1400	
	Materials -- binder, sheet protectors, ink, paper	for teachers' portfolios					70	100	7000	
Other inputs	Payouts for standards-based evaluation						1	327900	327900	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
Project components	Ingredients	Notes	Number of hours in task	Number of people performing tasks	Annualization Factor	Period	Amount of resource (or amount of tasks per person, for tasks with hourly computation)	Unit Value of Resource	Total Annual Cost (dollars)	Total Annual Cost (Hours)
Student Achievement										
Personnel	Students - elementary school	time to take additional assessment	1.5				1202	0	0	1803
	Students - middle school	time to take additional assessment	3				1437	0	0	4311
Materials/Equipment/Supplies	Contract for MAP test	additional assessment				0.2	1	48894	9778	
Other inputs	Payouts for student achievement						1	321942	321942	
	Payouts for student behavior/attendance						1	4600	4600	
Investments in or Extensions of Practice										
Professional Development Activities										
Personnel	Training for substitute teachers	first-year training for substitutes				0.2	1	1200	240	
	Substitute teachers						1	115000	115000	
Materials/Equipment/Supplies	Contract with Teachscape	also used to manage data (that portion of cost above)				0.33	0.11	195728	7092	
	Contract with Coalition of Essential Schools						1	73800	73800	
Travel/transportation	School administrator travel for conference PD	travel plus conference fee		5			1	1820	9100	
	Teacher travel to other sites/districts for PD	travel plus conference fee		16			1	1820	29120	

			For tasks that require hourly computation		For non-annual tangible resources	For non-annual intangible resources				
Project components	Ingredients	Notes	Number of hours in task	Number of people performing tasks	Annualization Factor	Period	Amount of resource (or amount of tasks per person, for tasks with hourly computation)	Unit Value of Resource	Total Annual Cost (dollars)	Total Annual Cost (Hours)
Other inputs	Payments for professional development		50	141			1	25	176250	
Job Expansion Activities										
Other inputs	Payouts for serving on Planning Team II	Teachers on Planning Team II					25	900	22500	
Educator Distribution										
Other inputs	Payouts	Retention bonus payouts					1	502000	502000	
TOTAL COST									2062543	6114
TOTAL EXPENDITURES									1765302	
COST PER PARTICIPANT									13307	
EXPENDITURES PER PARTICIPANT									11389	

Note: This table shows rounded values. I used unrounded values in calculations for findings.

Non-JR Project Standardized Data Template: Distribution								
<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Federal (TIF)</i>	<i>District</i>	<i>External Agency</i>	<i>School Administrators</i>	<i>Teachers</i>	<i>Students</i>
Project Administration								
<i>Personnel</i>	Project administrator	full-time	113338					
	Model C Planning Team I	1 additional district administrator and 1 external agency person		978	978			
	Model C Planning Team II	3 district administrators		1466				
	Model C Planning Team II	principals		2807		*		
<i>Facilities</i>	Project office space			8772				
<i>Materials/Equipment/Supplies</i>	Data management software	Software for data management and PD; other half of cost below		7092				
	Office supplies		500					
	Computer		232					
	Laptop		187					
	Tablet		148					
<i>Travel/transportation</i>	Travel for training/meetings - ED/TIF	2 TIF meetings; 3 nights	5680					
	Travel to school sites for implementation assistance			1000				
Demonstrated Performance								
Standards-Based Evaluation								
<i>Personnel</i>	District associate superintendent	performing administrator evaluations		10790				
	Consultants for initial evaluation training		5297					
	School principals	first-year training on the FFT		998		*		
	School assistant principals	first-year training on the FFT		1566		*		
	School principals	performing work for own evaluation		4055		*		
	School assistant principals	performing work for own evaluation		6364		*		
	School principals	performing work for one teacher observation and related activities		43979		*		
	School assistant principals	performing work for one teacher observation and related activities		69022		*		
	Teachers	performing work for informal peer observations		9807			*	
	Teachers	performing work for own formal evaluation		65378			*	

<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Federal (TIF)</i>	<i>District</i>	<i>External Agency</i>	<i>School Administrators</i>	<i>Teachers</i>	<i>Students</i>
<i>Personnel (continued)</i>	Teachers	performing work for own informal peer observation		3269			*	
	Teachers	performing work for own informal external observation		1634			*	
	Teachers	perform video self-reflection		13076			*	
	Teachers	create FFT portfolio		52303			*	
<i>Materials/Equipment/Supplies</i>	Danielson book - ASCD Action tool	one for each school	78					
	Danielson book - Framework for Teaching, 2nd ed.	one for each admin/teacher	1107					
	Tablet	for all administrators and teachers	22920					
	Materials -- binder, sheet protectors, ink, paper	for administrators' portfolios				1400		
	Materials -- binder, sheet protectors, ink, paper	for teachers' portfolios					7000	
<i>Other inputs</i>	Payouts for standards-based evaluation		295110	32790				
<i>Student Achievement</i>								
<i>Personnel</i>	Students - elementary school	time to take additional assessment						1803
	Students - middle school	time to take additional assessment						4311
<i>Materials/Equipment/Supplies</i>	Contract for MAP test	additional assessment	9779					
<i>Other inputs</i>	Payouts for student achievement		289748	32194				
	Payouts for student behavior/attendance		4140	460				
Investments in or Extensions of Practice								
<i>Professional Development Activities</i>								
<i>Personnel</i>	Training for substitute teachers	first-year training for Model C substitutes	240					
	Substitute teachers		115000					
<i>Materials/Equipment/Supplies</i>	Contract with Teachscape	for educators to access PD materials; also used as a data management platform (see cost above)		7092				
	Contract with Coalition of Essential Schools		73800					

<i>Project components</i>	<i>Ingredients</i>	<i>Notes</i>	<i>Federal (TIF)</i>	<i>District</i>	<i>External Agency</i>	<i>School Administrators</i>	<i>Teachers</i>	<i>Students</i>
<i>Travel/transportation</i>	School administrator travel for conference PD	travel plus conference fee	9100					
	Teacher travel to other sites/districts for PD	travel plus conference fee	29120					
<i>Other inputs</i>	Payments for professional development		176250					
<i>Job Expansion Activities</i>								
<i>Other inputs</i>	Payouts for serving on Model C Planning Team II	Teachers on Model C Planning Team II	22500					
Educator Distribution								
<i>Other inputs</i>	Payouts	Retention bonus payouts	451800	50200				
<i>TOTAL COST</i>			1626074	427092	978	1400*	7000*	6114
<i>TOTAL EXPENDITURES</i>			1626074	130828	0	1400	7000	0

*Due to data limitations, it is not clear how much of these costs were borne by the district and how much of these costs were borne by personnel within them. While I have recorded these costs in the "district" column, it is likely that some portion of the costs are borne by the staff themselves (i.e., through uncompensated time).

Note: This table shows rounded values. I used unrounded values in calculations for findings.

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